D

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APPENDIX D

CONSTRUCTION REPORT
FINAL SITE COVER

FINAL CONSTRUCTION REPORT
FINAL SITE COVER

Summit National Superfund Site
Deerfield Township of Portage County, Ohio

OCTOBER 1995

REF. NO. 2372 (66)

CONESTOGA-ROVERS & ASSOCIATES

This report is printed on recycled paper.

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1.0 INTRODUCTION

The Final Construction Report contained herein is included as Appendix D to the Remedial Action Report (RA Report) for the Summit National Superfund Site (Site) in Deerfield, Ohio, and summarizes the field activities pertaining to Phase 4 of the RA, namely the construction of the final Site cover at the Site. Construction activities commenced on June 1, 1995 and were completed on August 4, 1995, approximately 16 months ahead of the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) approved Remedial Construction (RC) schedule.

This report is organized as follows:

i) Section 1.0 - presents the purpose, background information, and layout of the final construction report;

ii) Section 2.0 - outlines the scope of work performed for the construction of the final Site cover;

iii) Section 3.0 - presents details of the Site management during construction of the final Site cover;

iv) Section 4.0 - presents details of the mobilization and demobilization activities;

v) Section 5.0 - presents details of the Site preparation activities; and

vi) Section 6.0 - presents details of the construction of the final Site cover.

A set of As-Recorded Drawings which show the as-constructed details for the final Site cover activities are included as an attachment with this report, and consist of the following drawing:

Dwg. No.	*Rev. No.*	*Date*	*Title*
F-2	0	October 1995	Final Grading Plan

2.0 SCOPE OF WORK

The fourth phase of the RA to be implemented at the Site, as required by the Consent Decree, was the construction of the final Site cover, and associated activities. The construction of the final Site cover consisted of the following activities:

i) mobilization of labor, plant, materials, equipment and support facilities to the Site;

ii) development and implementation of a Site-specific Health and Safety Plan by the selected remedial contractor to address safety requirements for installation of the final soil cover at the Site;

iii) importation and placement of 18 inches of clean sandy loam final Site cover;

iv) importation and placement of six inches of clean topsoil to complete the 24-inch final Site cover;

v) establishing a vegetative cover on the final Site cover; and

vi) demobilization of labor, plant, materials and equipment from the Site.

In addition to the final Site cover activities specified in the final design submission, the off-Site road drainage ditches between the adjacent west and north asphalt roads were regraded, topsoiled, and seeded.

3.0 REMEDIAL ACTION MANAGEMENT

3.1 CONSTRUCTION MANAGEMENT

CRA was retained by SNFT to provide oversight and management of the final Site cover activities. CRA's responsibilities included Site supervision, Site inspections, and liaison with the remedial contractors, SNFT, USEPA, OEPA, and adjacent property owners. As a minimum, one CRA representative was on Site for the duration of the construction activities.

3.1.1 Testing and Inspecting

R&R International (R&R) of Akron, Ohio was retained by SNFT to provide geotechnical testing services.

Analytical laboratory services were provided by Halliburton-NUS (NUS) of Pittsburgh, Pennsylvania, (imported clean soil analyses).

3.2 CONTRACTOR

D&M Oil Field Services DBA D&M Contracting Co. (D&M) of Randolph, Ohio was retained by SNFT as remedial contractor for final Site cover activities.

3.3 AGENCY OVERSIGHT

Black and Veatch Waste Science & Technology Corporation (B&V) provided oversight activities for USEPA during the construction activities. In addition to weekly attendance at the Site by B&V, USEPA, and OEPA were kept informed of Site activities through

correspondence, weekly and monthly progress meeting minutes, and quarterly progress reports.

3.4 SITE SECURITY

During the final Site cover activities, the Site gates were kept closed and locked except during importation of soil materials, at which time the open Site gates were manned by D&M personnel.

4.0 MOBILIZATION AND DEMOBILIZATION

D&M mobilized personnel, tools, equipment, and materials to the Site on June 1, 1995 after Sevenson Environmental Services (SES) completed regrading of the work area to subgrade elevations. D&M demobilized their equipment commencing on July 29, 1995. All equipment was removed from the Site after completion of seeding and mulching of the final Site cover on August 4, 1995.

5.0 SITE PREPARATION

Prior to commencing construction of the final Site cover, soil erosion and sediment controls were established. Silt fences, straw bales and erosion mats were used during construction to prevent washout of the Site cover until the vegetation was established.

6.0 FINAL COVER

Upon completion of the subgrade grading by SES, D&M commenced placement of the 18-inch sandy loam layer (with a remolded permeability of 1×10^{-3} cm/sec) on June 1, 1995, and completed placement on June 15, 1995, with the exception of a small basin in Grid No. 3-7. By end-dumping each load of loam soil while the truck and bulldozer were on top of placed clean imported soil, D&M was able to install the final cover utilizing Level D PPE. Compaction testing of the sandy loam indicated that sufficient compaction (greater than 90 percent of maximum dry density) was obtained when the material was placed in a single lift, and minimum compactive effort (two passes of the smooth drum roller) was expended. Over compaction was not desired due to the inherent decrease in permeability. Compaction testing results and source geotechnical testing results are provided in Attachment A.

Utilizing the Site grid system, grade stakes were placed at 50-foot spacing across the Site. The top of the sandy loam grade along with the top of the topsoil grade was marked on each grade stake for elevation control. In addition, on completion of the sandy loam layer, several test holes were advanced through the sandy loam to verify the thickness requirement of 18 inches. Tabulated thickness measurements included in Table 6.1 indicate an average loam soil final cover thickness of 19 inches, which is greater than the 18-inch thickness specified for the loam soil final cover.

The on-Site surface water control sump was backfilled with loam soil and topsoil after completion of the additional well installation and extraction well abandonments. After installation of the sandy loam layer, D&M commenced and completed placement of the 6-inch topsoil layer. Source geotechnical and analytical testing results for the topsoil are provided in Attachment A. Several test holes were advanced through the topsoil layer to confirm the final thickness of the topsoil final cover. Tabulated thickness measurements included in Table 6.1 indicate an average topsoil final cover thickness of 7 inches, which is greater than the 6-inch thickness specified for the topsoil final cover.

The work areas (less the basin in Grid No. 3-7) were seeded and mulched on August 3 and 4, 1995 by D&M with the following seed mixture:

Kentucky Bluegrass	80	pounds/acre
Creeping Red Fescue	40	pounds/acre
Perennial Ryegrass	15	pounds/acre
Total Seed Mixture	135	pounds/acre

The seed mixture was obtained from Oliger Seed Company of Akron, Ohio. Certification of the seed mixture provided is included in Attachment B.

As approved by USEPA and OEPA (see Section 8.0 of the Final Design Report), gas vents were not installed in the final Site cover.

A final Site topographic survey was conducted by Wellert Corporation of Wadsworth, Ohio, on August 24 and 29, 1995. Final Site contours generated from the topographic survey are presented on Drawing No. F-2.

TABLE 6.1

FINAL COVER DEPTHS
FINAL SITE COVER
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Location (1)			*Depths (inches)*	
Grid No.	*Southing (feet)*	*Easting (feet)*	*Sandy Loam*	*Topsoil*
1 - 3	100	210	18	--
2 - 4	350	125	24	--
4 - 4	365	305	18.5	--
2 - 4	150	395	17.75	--
5 - 4	450	380	20	--
5 - 4	475	350	17.5	--
4 - 6	350	560	18	--
1 - 4	25	375	19.5	--
5 - 3	425	250	19	--
6- 6	525	550	18	--
1 - 5	50	400	--	7.5
4 - 6	150	180	--	7.5
2 - 2	75	75	--	7.5
3 - 2	230	85	--	7.5
2 - 6	390	240	--	7.5
5 - 3	400	380	--	7
5 - 5	475	615	--	6.5
3 - 7	320	590	--	5
1 - 5	250	480	--	6.5
1 - 1	270	350	--	6.5
		Average Depth	19	7

Note:

(1) Southing and Easting based on local Site grid system as shown on Drawing No. F-2.

ATTACHMENT A

LOAM SOIL AND TOPSOIL GEOTECHNICAL RESULTS

FINAL SITE COVER
GEOTECHNICAL REPORT SUMMARY

Summit National Superfund Site
Deerfield, Ohio

DATE	TESTED BY	REPORT #	MATERIAL TESTED	TEST	# OF TESTS
3/27/95	R & R	--	loam soil source	gradation max. dry density	1 1
3/27/95	R & R	--	topsoil source	gradation max. dry density	1 1
6/5/95	R & R	14	loam final cover	compaction procedure testing	9
6/15/95	R & R	15	loam final cover	compaction	8

Notes: R & R = R & R International, Inc. of Akron, Ohio

MOISTURE (ASTM D-2216-80), GRADATION (ASTM D-422-63) AND ATTERBURG LIMITS (ASTM D-4318-64)

SAMPLE NUMBER	DEPTH (ft)	MOISTURE CONTENT(%)	PARTICLE SIZE ANALYSIS (% Passing US. Standard sieve) 3/4"	3/8"	#4	#10	#40	#100	#200	ATTERBURG LIMITS L.L.	P.L.	P.I.	USCS CLASSIFICATION
S-1 / PC-8	TOPSOIL	---	99.3	95.9	93.4	91.3	83.7	67.1	61.2				OH
S-2 / PC-7	SANDY LOAM	---	98.6	96.7	93.8	90.0	74.5	33.1	21.3				SM
S-3 / PC-9	---	---	98.4	98.1	97.5	95.9	90.0	75.0	68.3				OH

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1

To Steve	From Mark Figura
Co. CRA	Co.
Dept.	Phone #
Fax # 947-0336	Fax #

MAR-27-1995 08:07 FROM R&R INTERNATIONAL GEOTECH TO 19470336 P.01

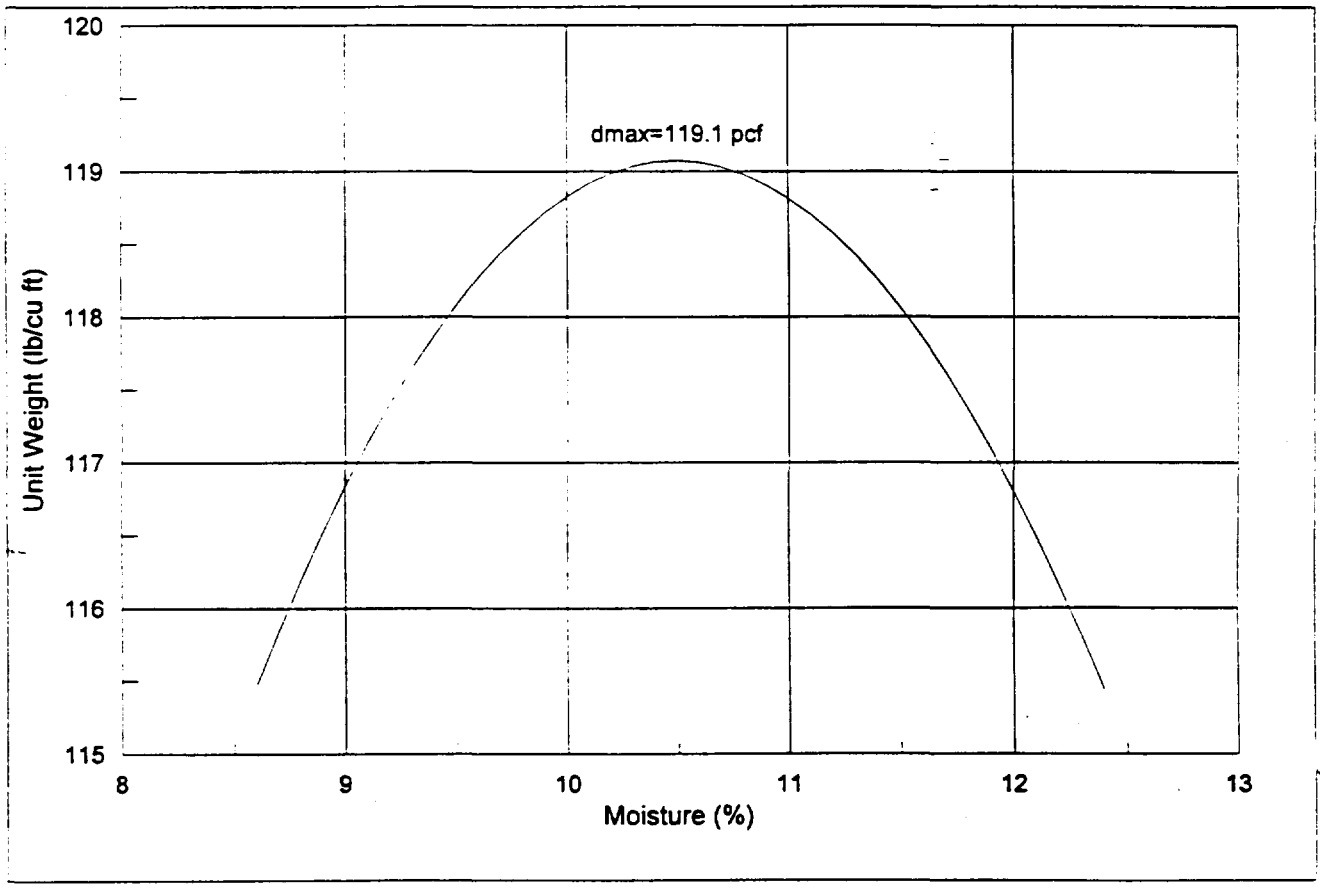
R&R

Sandy Loam Final Cover at Source

LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT (12,400 FT-LBF/CU FT)

ASTM D 698 - 91

CLIENT:	Conestoga-Rover
PROJECT:	Deerfield Landfill
LOCATION:	
SAMPLE NO.	PC-7
SAMPLE ORIGIN:	Sample #2, Hilltop Aggregates
DATE TESTED:	3/07/94
MATERIAL DESCRIPTION:	Brown SAND, some gravel
MAXIMUM DRY DENSITY:	119.1 lb/cu ft
OPTIMUM MOISTURE CONTENT:	10.5 %



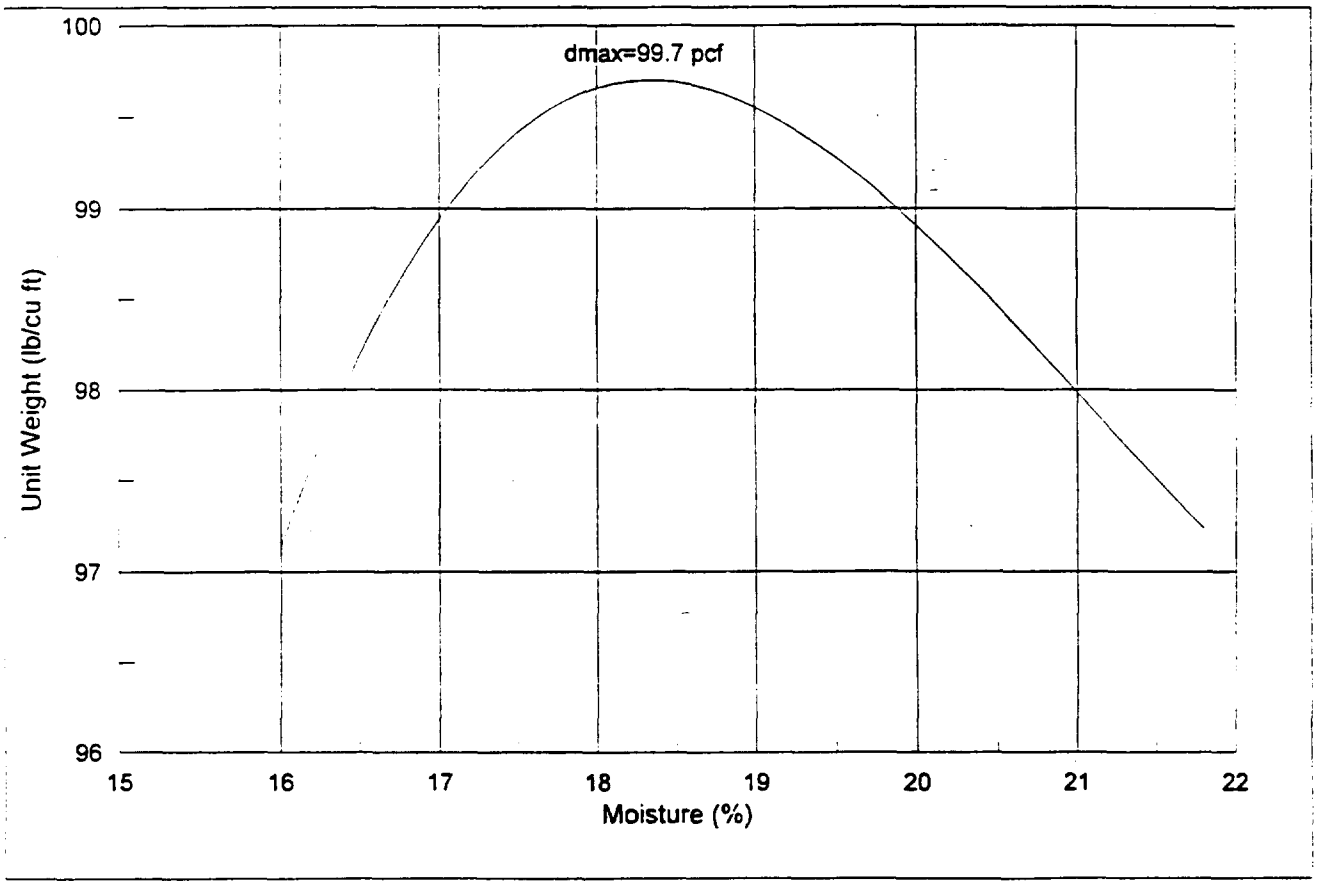
R&R INTERNATIONAL INC

Topsoil Final Cover at Source

LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT (12,400 FT-LBF/CU FT)

ASTM D 698 - 91

CLIENT:	Conestoga-Rover
PROJECT:	Deerfield Landfill
LOCATION:	
SAMPLE NO.	PC-8
SAMPLE ORIGIN:	Sample #1, D & M Site
DATE TESTED:	3/08/94
MATERIAL DESCRIPTION:	Dark Brown, SANDY SILT with some Organics
MAXIMUM DRY DENSITY:	99.7 lb/cu ft
OPTIMUM MOISTURE CONTENT:	18.3 %



DAILY FIELD REPORT

PROJECT IDENTIFICATION Deerfield National Superfund Site	**PROJECT NO.** 216003.01 **REPORT NO.** 14	**PAGE NO.** Page 1 of 4 **DATE** 6/5/95 **DAY OF THE WEEK** Monday
LOCATION OF ADDRESS Deerfield, Ohio		**WEATHER** Sunny Humid **TEMP (F)** 76
OWNER U.S. Government		**PROJECT MANAGER** Santino Piccoli
GENERAL CONTRACTOR / REPRESENTATIVE Conestoga Rovers / Steve Hayle		**SUPERVISOR** Mark Swogger
OTHERS PRESENT Jereon Winterink		**FIELD REPRESENTATIVE** Rick Dice
SPECIALTY CONTRACTOR ☐ GRADING ☐ EXCAVATION ☐ OTHER		**PLANS AND SPECIFICATIONS** BY CRA DATE May 1993
SPECIALTY CONTRACTOR'S SUPERINTENDENT OR FOREMAN None		
PROJECT BRIEFING ☐ PREVIOUSLY REPORTED ☐ BY ☐ NO ☒ UNKNOWN ☐ ON		**SOURCE OF FILL** Borrow
CONTRACTOR'S EQUIPMENT OBSERVED IN USE '(2) Cat Dozer (1) Vibratory Roller		**FIRM EQUIPMENT USED** TYPE/MODEL MFR. MC-3 CPN SERIAL NO. **

VISITORS

NAME	REPRESENTING	ARR.	DPT.
N/A			

FOLLOW-UP FROM PRIOR REPORT

YES ☒ NO ☐

DID YOU OBSERVE EVERYTHING YOU EXPECTED TO?

YES ☒ NO ☐

DID YOU OBSERVE ANYTHING UNEXPECTED?

YES ☐ NO ☒

DID YOU SEE, HEAR, SMELL, TASTE, OR TOUCH ANYTHING UNUSUAL OR UNEXPLAINED?

No

WHAT IN PARTICULAR SHOULD BE OBSERVED, CHECKED, OR TESTED DURING THE NEXT VISIT?

As directed

Project No. 216003.01	Page No. Page 2 of 4
Report No. 14	Date 6/5/95 Thursday

Project I.D.
Summit National Superfund Site

Field Representative
Rick Dice

CONTRACTOR ACTIVITIES

INDICATE ACTIVITIES YOU DID AND DID NOT MONITOR

Observed contractor putting fill material in 18" lifts and rolling for compaction.

Field Representative's Activities

ARR. 12:30 A.M. DPT. 2:30 P.M.

Gave Client a series of tests to determine compaction of between 90% and 95% with the least amount of passes with a roller was determine with test results that (2) two passes with the roller without the vibrator on was adequate for their purposes.

CPN MC-3 NUCLEAR DENSITY STANDARD COUNT

	A.M.			P.M.	
CPM	Wet	H2O	CPM	Wet	H2O
PRV	- - -	- - -	PRV	- - -	- - -
STD	- - -	- - -	STD	- - -	- - -
XI	- - -	- - -	XI	- - -	- - -
N	- - -	- - -	N	- - -	- - -
DAT	- - -	- - -	DAT	- - -	- - -

NOTICE

The professional engineer is represented on site solely to observe operations of the contractor identified, form opinions about the adequacy of those operations, and report those opinions to the client. The presence and activities of the engineer's field representative do not relieve the contractor's obligation to meet contractural requirements. The contractor retains sole responsibility for site safety and the methods and sequences of construction.

☐ THIS DFR IS PRELIMINARY

A preliminary report is provided soley as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in a preliminary report.

☑ THIS DFR IS FINAL

This final report has been reviewed by the Project Manager. Any conclusions drawn from this report should be discussed with and evaluated by the Project Manager involved

A:Field Report\Disk #9/003Act14.wk4/clt

FIELD REPRESENTATIVE — DATE

Rick Dice — 6/5/95

REVIEWED BY — DATE

6-6-95

REPORT OF FIELD COMPACTION TESTS

Project: Summit National Superfund Site | Report No.: 14

Site Location: Deerfield Twp., Portage County, Ohio | Page: 3 of 4

Contractor: Severson Excavating Company | Date Tested: 6/5/95

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-7 | Material Description: Brown SILTY SAND, trace gravel, trace clay

Maximum Lab. Dry Density = 119.1 pcf | Optimum Water Content = 10.5 % of dry weight

Req'd Min. % Compaction = 90 % | Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density = 107.2 pcf | From "Optimum" - 3 % = 8.5 % (Minimum)

Lab. Test Method: ASTm D 698-91 | To "Optimum" + 3 % = 12.5 % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
112	DT	12"	Subgrade	132.2	8.6	121.5	119.1	102%	N/A	Fill Material
113	DT	4"	Subgrade	118.0	10.1	107.2	119.1	90%	N/A	Fill Material
114	DT	12"	Subgrade	132.0	9.5	120.5	119.1	101%	N/A	Fill Material
115	DT	4"	Subgrade	129.0	9.3	118.0	119.1	99%	N/A	Fill Material
116	DT	12"	Subgrade	118.1	8.7	108.6	119.1	91%	N/A	Fill Material
117	DT	4"	Subgrade	112.2	9.4	102.8	119.1	86%	N/A	Fill Material
118	DT	4"	Subgrade	115.6	8.6	106.4	119.1	89%	N/A	Fill Material
119	DT	12"	Subgrade	124.7	8.4	115.0	119.1	97%	N/A	Fill Material

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

112	200' East, 100' South [uncompacted test]
113	200' East, 100' South [uncompacted test]
114	270' East, 75' South [compacted test]
115	220' East, 155' South [compacted test]
116	220' East, 155' South [compacted only by truck tires]
117	220' East, 155' South [compacted only by truck tires]
118	230' East, 155' South [one pass with roller]
119	230' East, 155' South [two passes with roller]

Remarks: All test elevations and locations given by Jeroen Winterink. Mr. Winterink also asked that for this particular job, nothing be submitted in the column P/F.

216003.01
R&R Project No.

Rick Dice
R&R Technician

Approved By/Date 6-6-95

Field Report #9/003FC15A/clt

REPORT OF FIELD COMPACTION TESTS

Project: Summit National Superfund Site — Report No.: 14

Site Location: Deerfield Twp., Portage County, Ohio — Page: 4 of 4

Contractor: Severson Excavating Company — Date Tested: 6/5/95

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-7 — Material Description: Brown SILTY SAND, trace gravel, trace clay

Maximum Lab. Dry Density = 119.1 pcf — Optimum Water Content = 10.5 % of dry weight

Req'd Min. % Compaction = 90 % — Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density = 107.2 pcf — From "Optimum" - 3 % = 8.5 % (Minimum)

Lab. Test Method: ASTM D 698-91 — To "Optimum" + 3 % = 12.5 % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
120	DT	4"	Subgrade	118.8	9.2	108.7	119.1	91%	N/A	Fill Material

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

120	200' East, 155' South [two passes with roller]

Remarks: All test elevations and locations given by Jeroen Winterink. Mr. Winterink also asked that for this particular job, nothing be submitted in the column P/F.

216003.01
R&R Project No.

Rick Dice
R&R Technician

Approved By/Date 6-6-95

Field Report #9/003FC15b/clt

DAILY FIELD REPORT

PROJECT IDENTIFICATION Deerfield National Superfund Site	**PROJECT NO.** 216003.01 **REPORT NO.** 15	**PAGE NO.** Page 1 of 3 **DATE** 6/15/95 **DAY OF THE WEEK** Thurs.
LOCATION OF ADDRESS Deerfield, Ohio		**WEATHER** Sunny **TEMP (F)** 80
OWNER U.S. Government		**PROJECT MANAGER** Santino Piccoli
GENERAL CONTRACTOR / REPRESENTATIVE Conestoga Rovers / Steve Hayle		**SUPERVISOR** N/A
OTHERS PRESENT None		**FIELD REPRESENTATIVE** Mark Swogger
SPECIALTY CONTRACTOR D&M [ ] GRADING [X] EXCAVATION [ ] OTHER		**PLANS AND SPECIFICATIONS** BY CRA DATE May 1993
SPECIALTY CONTRACTOR'S SUPERINTENDENT OR FOREMAN None		
PROJECT BRIEFING [X] PREVIOUSLY REPORTED [ ] BY [ ] NO [ ] UNKNOWN [ ] ON		**SOURCE OF FILL** Borrow
CONTRACTOR'S EQUIPMENT OBSERVED IN USE D-7 Cat Dozer 5 Tandem D		**FIRM EQUIPMENT USED** TYPE/MODEL MFR. MC-3 CPN SERIAL NO. 1013

VISITORS

NAME	REPRESENTING	ARR.	DPT.
N/A			

FOLLOW-UP FROM PRIOR REPORT

YES [X] NO [ ]

DID YOU OBSERVE EVERYTHING YOU EXPECTED TO?

YES [X] NO [ ]

DID YOU OBSERVE ANYTHING UNEXPECTED?

YES [ ] NO [X]

DID YOU SEE, HEAR, SMELL, TASTE, OR TOUCH ANYTHING UNUSUAL OR UNEXPLAINED?

No

WHAT IN PARTICULAR SHOULD BE OBSERVED, CHECKED, OR TESTED DURING THE NEXT VISIT?

As directed

Project No. 216003.01	Page No. Page 2 of 3
Report No. 15	Date 6/15/95 Thursday

Project I.D.
Summit National Superfund Site

Field Representative
Mark Swogger

CONTRACTOR ACTIVITIES

INDICATE ACTIVITIES YOU DID AND DID NOT MONITOR

Contractor graded East end of site.

Test for depth of fill

1) 100' South, 210' East [Total 1 to 7 1/2 (Avg. 1 1/2)] = 18"
2) 350' South, 125' East = 24"
3) 265' South, 305' East = 18 1/2"
4) 150' South, 395' East = 17 3/4"
5) 450' South, 380' East = 20"
6) 475' South, 350' East = 17 1/2"
7) 350' South, 560' East = 18"
8) 25' South, 375' East = 19 1/2"
9) 425' South, 250' East = 19"
10) 525' South, 550' East = 15"

Field Representative's Activities

ARR. 11:00 A.M. DPT. 2:30 P.M.

Dug test holes to verify depth of sand cover and tested compaction.

CPN MC-3 NUCLEAR DENSITY STANDARD COUNT

--- A.M.			--- P.M.		
CPM	Wet	H2O	CPM	Wet	H2O
PRV	- - -	- - -	PRV	- - -	- - -
STD	- - -	- - -	STD	- - -	- - -
XI	- - -	- - -	XI	- - -	- - -
N	- - -	- - -	N	- - -	- - -
DAT	- - -	- - -	DAT	- - -	- - -

NOTICE

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☐ THIS DFR IS PRELIMINARY

A preliminary report is provided soley as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in a preliminary report.

☑ THIS DFR IS FINAL

This final report has been reviewed by the Project Manager. Any conclusions drawn from this report should be discussed with and evaluated by the Project Manager involved

A:Field Report\Disk #9/003Act15.wk4/clt

FIELD REPRESENTATIVE	DATE
Mark Swogger	6/15/95
REVIEWED BY	DATE
[signature]	6-16-95

REPORT OF FIELD COMPACTION TESTS

Project: Summit National Superfund Site — Report No.: 15

Site Location: Deerfield Twp., Portage County, Ohio — Page: 3 of 3

Contractor: Severson Excavating Company — Date Tested: 6/15/95

INFORMATION FURNISHED FROM LABORATORY

Material ID: PC-7 — Material Description: Brown SILTY SAND

Maximum Lab. Dry Density = 119.1 pcf — Optimum Water Content = 10.5 % of dry weight

Req'd Min. % Compaction = 90 % — Acceptable Range of Water Contents:

Req'd Min. In-Place Dry Density 107.1 pcf — From "Optimum" - --- % = --- % (Minimum)

Lab. Test Method: --- — To "Optimum" + --- % = --- % (Maximum)

FIELD TEST DATA (Test Method ASTM D 2922)

Test No.	BS / DT	Test Depth	Test Elevation	In-Place Wet Density	Water Content (%)	In-Place Dry Density	Max. Dry Density	% Comp.	P / F	Comments (Fill Material, Backfill, Base Course, Subbase etc.)
121	DT	6"	Grade	129.0	11.5	117.5	119.1	99%	P	
122	DT	6"	Grade	117.8	8.6	109.2	119.1	92%	P	
123	DT	6"	Grade	131.0	11.4	119.6	119.1	100%	P	
124	DT	6"	Grade	135.6	8.7	126.9	119.1	107%	P	
125	DT	6"	Grade	121.4	6.6	114.9	119.1	96%	P	
126	DT	6"	Grade	128.2	7.2	120.9	119.1	102%	P	
127	DT	6"	Grade	125.4	7.4	118.0	119.1	99%	P	
128	DT	6"	Grade	128.5	10.8	117.7	119.1	99%	P	

BS = Backscatter, DT = Direct Transmission. P = Pass, F = Fail.

TEST LOCATIONS

121	550' South, 550' East
122	490' South, 450' South
123	360' South, 325' East
124	200' South, 425' East
125	25' South, 375' East
126	150' South, 450' East
127	200' South, 500' East
128	425' South, 350' East

Remarks: Tests fail to meet moisture content criteria of ASTM D 3017

216003.01
R&R Project No.

Mark Swogger
R&R Technician

Peter S Peil 6-16-95
Approved By/Date

Field Report #9/003FC15A/clt

ATTACHMENT B

SEED CERTIFICATION

69 HANNA PARKWAY
724-1266
AREA CODE 216

• QUALITY AND SERVICE OUR MOTTO •

MEMBER
WESTERN SEEDSMEN'S ASS'N
ATLANTIC SEEDSMEN'S ASS'N
OHIO SEED DEALER'S ASS'N
OHIO NURSERYMEN'S ASS'N

OLIGER SEED COMPANY

WHOLESALE SEEDS

AKRON, OHIO 44319

July 12, 1995

To Whom It May Concern.....

This is to verify that we are preparing 1,150 lbs. of the following seed mixture for the O & M Contracting Co. of Randolph, Ohio for their seeding project at the Summit National Site Facility Trust at State Rts. 224/225.

59.26%	Kentucky Bluegrass	80 lb/acre
29.63%	Creeping Red Fescue	40 lb/acre
11.11%	Perennial Ryegrass	15 lb/acre
100.00%		135 lb/acre

All seed used in this mixture will be top quality, untreated seed and will meet all requirements of the Ohio Seed Law and the Federal Seed Act.

In accordance with these regulations, each bag of seed mixture furnished will be affixed with an identifying tag showing the percentages of purity and germination of each seed type, along with the percentage of crop seed, weed seed and inert matter.

Per: Robert C. Oliger

Robert C. Oliger, Pres.


E

APPENDIX E

CONSTRUCTION REPORT
WELL INSTALLATION AND ABANDONMENT

FINAL CONSTRUCTION REPORT
WELL INSTALLATION AND ABANDONMENT

Summit National Superfund Site
Deerfield Township of Portage County, Ohio

OCTOBER 1995
REF. NO. 2372 (62)
This report is printed on recycled paper.

CONESTOGA-ROVERS & ASSOCIATES

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1.0 INTRODUCTION

The Final Construction Report contained herein is included as Appendix E to the Remedial Action Report (RA Report) for the Summit National Superfund Site (Site) in Deerfield, Ohio, and summarizes the field activities pertaining to Phase 5 of the RA, namely, the abandonment of existing wells and piezometers and the construction of new monitoring wells, piezometers, extraction wells and a potable water supply well at the Site. Phase 5 of the RA was further subdivided into four phases of implementation to correspond to implementation of the other phases of the RA. Phases I to III well installation and abandonment and related activities commenced on July 22, 1993 and were completed on December 22, 1993, approximately one month ahead of the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) approved Remedial Construction (RC) schedule. Phase IV well installation commenced on July 25, 1994 and was completed on November 4, 1994, approximately three weeks ahead of the USEPA and OEPA approved RC Work Plan schedule. Based on an evaluation of the effectiveness of the groundwater extraction system at the Site as detailed in Section 8, the extraction wells were abandoned in July 1995 and additional monitoring wells were installed in the Intermediate Units and Upper Sharon Unit at the Site during June and July 1995.

This report is organized as follows:

i) Section 1.0 - presents the purpose and background information and layout of the final construction report;

ii) Section 2.0 - outlines the scope of work performed during the well installation and abandonment activities;

iii) Section 3.0 - presents details of the Site management during well installation and abandonment activities;

iv) Section 4.0 - presents the details of the mobilization and demobilization activities;

v) Section 5.0 - presents the details of the abandonment of existing wells;

vi) Section 6.0 - presents the details of the construction of the new monitoring wells, piezometers, and potable water supply well;

vii) Section 7.0 - presents the details of the extraction well installation and testing activities;

viii) Section 8.0 - presents the details of the extraction well shutdown and abandonment activities and the additional monitoring well installation activities;

ix) Section 9.0 - presents the implementation of the Operation, Maintenance, and Monitoring Plan (OMMP); and

x) Section 10.0 - presents the health and safety activities during implementation of the well installation and abandonment activities.

A set of As-Recorded Drawings which show the as-constructed detail for the well installation and abandonment activities are included as an attachment with this report, and consist of the following drawings:

Drawing No.	*Revision No.*	*Date*	*Title*
G-2	0	October 1995	Site Work
G-5	0	October 1995	Well Details

2.0 SCOPE OF WORK

The fifth phase of the RA to be implemented at the Site, as required by the Consent Decree, was the installation and abandonment of monitoring wells, piezometers, extraction wells and a potable water supply well at the Site, and associated activities. The well installation and abandonment initial scope of work, as detailed in the Final Design Report and RC Work Plan, consisted of the following major activities:

i) mobilization of labor, plant, materials and equipment to the Site;

ii) development and implementation of a Site-specific Health and Safety Plan by the selected drilling contractor for abandonment/installation of piezometers, monitoring wells and extraction wells;

iii) installation of the potable water supply well in Grid 1-7, and closing and abandoning the Tipple Well in Grid 2-3, piezometer P1-6 in Grid 1-6 and monitoring well MX-1 in Grid 1-8, prior to commencement of the groundwater treatment system phase of the RA;

iv) installation of new monitoring wells and piezometers both on and off Site;

v) abandonment of existing monitoring wells and piezometers both on and off Site;

vi) installation of extraction wells adjacent to the pipe and media drain;

vii) adjustment of the surface casings of the four existing wells to remain, to compensate for the change in final ground elevations; and

viii) demobilization of labor, plant, materials and equipment from the Site.

In addition to the scope of work specified in the Final Design Report, based on an evaluation of the effectiveness of the groundwater extraction system after operation of the extraction wells for a

period of five months, as detailed in Section 8.0, the extraction well pumps were abandoned and 12 additional monitoring wells were installed.

3.0 REMEDIAL ACTION MANAGEMENT

3.1 CONSTRUCTION MANAGEMENT

CRA was retained by SNFT to provide oversight and management of the well installation and abandonment activities. CRA's responsibilities included Site supervision, Site inspections, and liaison with the remedial contractor, SNFT, USEPA, and OEPA. A geologist from CRA was on Site for the well installation and abandonment activities.

3.2 CONTRACTOR

Frontz Drilling, Inc. (Frontz) of Wooster, Ohio, was retained by SNFT as the contractor for the well installation and abandonment activities.

3.3 AGENCY OVERSIGHT

Black and Veatch Waste Science and Technology Corporation (B&V) provided oversight activities for USEPA during the construction activities. In addition to weekly attendance at the Site by B&V, USEPA and OEPA were kept informed of Site activities through correspondence, weekly progress meeting minutes, monthly progress meetings and quarterly progress reports.

3.4 SITE SECURITY

Mid-American Security Services Inc. provided security for the Site premises during all RC activities at the Site. All workers and visitors were required to sign in and out at the Site entrance every day. Daily Site sign-in sheets have been retained by SNFT.

4.0 MOBILIZATION AND DEMOBILIZATION

After being given the Notice to Proceed on June 30, 1993, Frontz mobilized personnel, tools, equipment and materials to the Site on July 22, 1993 to commence the Phases I to III well installation and abandonment activities. A preconstruction meeting with Frontz was held at the Site on July 13, 1994. Frontz demobilized from the Site On December 20, 1993 after completion of Phases I to III well installation and abandonment activities. Frontz remobilized to the Site on July 25, 1994 to commence Phase IV well installation activities, and demobilized on November 4, 1994 after completion of all well installation and testing activities.

Frontz mobilized personnel, tools and equipment, and materials to the Site on June 19, 1995 to commence abandonment of the extraction wells and installation of additional monitoring wells, and demobilized the well installation and abandonment equipment on July 18, 1995.

During the well installation and abandonment activities, Frontz mobilized and demobilized personnel, tools, equipment and materials as required for performance of the Works. All plant and equipment decontamination was performed at the on-Site equipment decontamination facility. Decontamination wastewater was stored on Site in wastewater tanks provided by Frontz, and was transferred to and treated by the on-Site groundwater treatment system.

5.0 WELL ABANDONMENT

With the exception of four existing wells designated to remain (MW-4, MW-11, MW-25 and P2-1), all existing wells at the time of initial mobilization to the Site were abandoned in July 1993. The wells were abandoned by filling the screened interval and riser pipe with pure bentonite grout, removing the surface installation and riser pipe to 5 feet below ground surface, plugging the remaining top 5 feet of riser pipe with a cement/ bentonite grout, and backfilling the resulting excavation to ground surface with a bentonite/native fill mixture. As approved by USEPA and OEPA, MW-25 also was abandoned in July 1995 and replaced with a LIU monitoring well (MW-321) as the well screen for MW-25 was determined to span the confining layer between the UIU and LIU. Drawing G-2 shows the location of and lists the wells that were abandoned.

In addition to the wells identified to be abandoned, an additional well located adjacent to the Watson house in Grid 1-9 was abandoned. New piezometer PZ-102 was damaged by the soil removal and treatment contractor and had to be abandoned in December 1994. A new piezometer PZ-102R was installed by Frontz on November 23, 1994 to replace the abandoned PZ-102. New monitoring well MW-104 was initially installed outside the Site security fence adjacent to State Route 225. It was subsequently decided to relocate MW-104 to inside the Site security fence to minimize the possibility of the piezometer being damaged outside the security fence. MW-104 was abandoned on June 21, 1995 in accordance with the construction specifications, and was replaced by a new MW-104 inside the Site security fence on July 7, 1995.

6.0 MONITORING WELL, PIEZOMETER, AND POTABLE WATER SUPPLY WELL INSTALLATIONS

As required by the final design for the Site, 58 wells were installed in four phases at the Site. The monitoring wells and piezometers installed were as follows:

i) seventeen monitoring wells and six piezometers in the WTU;
ii) nine monitoring wells and seven piezometers in the UIU;
iii) nine monitoring wells and six piezometers in the LIU; and
iv) four monitoring wells in the USU.

In addition, a portable water supply well was installed in the Sharon Unit to provide clean water for use during the RC activities at the Site and for use in the groundwater treatment building at the Site. An Ohio well log and drilling report for the potable water supply well (No. 777441 dated October 28, 1993) was submitted to the Ohio Department of Natural Resources, Division of Water by Frontz. A copy of the potable water supply well log and drilling report is included in Attachment A.

With the exception of monitoring well MW-402, all Phase I to III monitoring wells and piezometers shown on Drawing G-2 were installed and developed during the period July 22, 1993 to December 23, 1993. The potable water supply well was installed during the period July 22 to August 5, 1993. Phase IV monitoring wells and piezometers and MW-402 were installed and developed during the period July 25 to October 6, 1994, as sections of the pipe and media drain installation and backfilling to subgrade elevations were completed by the groundwater extraction system contractor.

Well installation details are summarized on Table 6.1 and the well instrumentation logs are provided in Attachment A. Surveyed well coordinates and elevations (as surveyed by Wellert Corporation of Wadsworth, Ohio, on August 24 and 29, 1995, with a horizontal and vertical tolerance of plus or minus 0.02 feet) also are provided on Table 6.1. Drawing G-2 shows the location of the new monitoring wells, piezometers and potable water supply well. Drawing G-5 provides typical monitoring well, piezometer and potable water supply well installation details.

Drill cuttings collected from the drilling operation were used as backfill under the final Site cover. Drilling fluids were vacuumed into a tanker and transferred to a mud settling pond constructed in Grid 3-2. Free water from the mud settling pond was later transferred to the decontamination waste water holding tank and the remaining solids were left in place for later use as fill under the final soil cover.

Phase IV bedrock well overburden casings were installed using hollow stem auger drilling method, resulting in significant reduction in the amount of drilling fluids generated during installation of these wells.

All drilling and sampling equipment was decontaminated at the on-Site decontamination pad prior to use and between each borehole. Similarly, well construction materials were decontaminated in accordance with the construction specifications.

7.0 EXTRACTION WELL INSTALLATION AND TESTING

Six extraction wells were installed and developed during the period July 27 to September 29, 1994, and were pump tested during the period September 13 to October 20, 1994. Pump testing of each extraction well consisted of a step-drawdown pump test and then an 8-hour constant rate pump test. Details of the pump testing were provided to USEPA and OEPA in a letter dated January 5, 1995. USEPA and OEPA comments on the extraction well pump testing details were responded to on April 20, 1995.

The six extraction wells were installed adjacent to manholes on the pipe and media drain as shown on Drawing G-2. The extraction wells were screened in both the UIU and LIU.

A summary of extraction well installation details are provided on Drawing No. G-5, and the extraction well instrumentation logs are provided in Attachment B. Surveyed extraction well coordinates and elevations are provided on Table 6.1. Drawing G-2 shows the locations of the extraction well installations, and Drawing G-5 provides typical extraction well installation details.

Geophysical logging of four (EW1, EW2, EW3, and EW4) of the six extraction wells were conducted by Eastern Well Surveys during the period of August 23, 1994 to September 29, 1994. In general, the geophysical logging of the wells corresponded to the visual logging during well installation. Copies of the geophysical logs are included in Attachment C.

The extraction well surface chambers, mechanical and electrical controls were installed under a separate contract. Details of the surface chambers, mechanical and electrical controls are provided in Appendix B of the Remedial Action Report.

8.0 EXTRACTION WELL SHUTDOWN AND ADDITIONAL MONITORING WELL INSTALLATION

Initial startup of the groundwater extraction system at the Site occurred on December 1, 1994. On April 26, 1995, SNFT submitted an evaluation of the effectiveness of the groundwater extraction system at the Site to USEPA and OEPA, including a recommendation to discontinue extraction of groundwater from the six IU extraction wells installed at the Site. USEPA and OEPA approved (verbally on May 3, 1995 and letter dated May 11, 1995) SNFT's recommendation to shut down the extraction wells, and the extraction wells were shut down on May 9, 1995.

As requested by USEPA and OEPA, SNFT prepared and submitted an evaluation of the monitoring well network at the Site in letters dated June 13 and 21, 1995. SNFT provided responses dated June 21, 22, and 23, 1995 to USEPA and OEPA comments on the monitoring well network evaluation. USEPA and OEPA approved the additional well installations and abandonments as detailed in SNFT's evaluations as follows:

i) installation of three additional USU monitoring wells;
ii) conversion of two extraction wells to UIU monitoring wells;
iii) installation of one additional UIU monitoring well;
iv) installation of four additional LIU monitoring wells;
v) abandonment of existing monitoring well MW-25 and installation of a new LIU monitoring well to replace MW-25;
vi) abandonment of four extraction wells and one WTU well; and
vii) installation of a deeper WTU well to replace MW-104.

The additional well installations and abandonments were completed by Frontz during the period June 19, 1995 to July 18, 1995, and the new monitoring wells were developed during the period August 15 to 23, 1995.

Details of the additional well installations are provided on Table 6.1, and the surveyed well coordinates and elevations also are provided

on Table 6.1. Well instrumentation logs for the additional wells installed are provided in Attachment A.

Drill cuttings from the drilling operations were placed on Site in the former east pond area of the Site, under the final Site cover. Drilling and well development fluids were transferred to the on-Site groundwater treatment plant for treatment prior to discharge. All drilling and sampling equipment used for the additional well installation and abandonment activities were decontaminated in the groundwater treatment plant building process equipment area prior to use, between each borehole, and prior to demobilization from the Site.

9.0 HEALTH AND SAFETY

The abandonment of existing wells and the construction of the monitoring wells, piezometers, extraction wells, and potable water supply well and related activities were conducted in accordance with Frontz's Site-specific Health and Safety Plan (HASP). The HASP provided specific information regarding air monitoring, use of personnel protective clothing and equipment, work area designations, hospital routes, and emergency numbers. A copy of the HASP was kept on Site and was made available to all Site personnel and visitors.

Health and safety activities were performed during all well installation and abandonment activities, including performance of air monitoring on and around the Site and ensuring that all personnel were properly informed and trained as required by the HASP.

With the exception of monitoring wells MW-206, MW-207, MW-219, MW-306, MW-307, and MW-319 and piezometers PZ-107, PZ-205 and PZ-305, all wells were installed in either Level D or C PPE. Based on the results of air monitoring during installation of PZ-205, installation of all the wells within this grid was conducted in Level B (supplied air) PPE. CRA's Certified Industrial Hygienist (CIH) was on Site to monitor initial Level B work activities, in addition to the monitoring by Frontz's HSO.

TABLE 6.1

SUMMARY OF WELL CONSTRUCTION DETAILS, COORDINATES AND ELEVATIONS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

	Location (1)			Elevations (1)								
Well ID	*Grid*	*Northing*	*Easting*	*Top of Casing*	*Top of Riser*	*Ground*	*Diameter*	*Screen Material*	*Length of Screen (feet)*	*Hydrogeologic Unit*	*Date Completed*	*Total Depth (ft. BTOR)*
MW-4	E of 5-9	9,504.40	5,951.81	1,091.09	1,089.37	1,088.08		PVC	5	WTU	Jul-80	26.5
MW-11	6-6	9,415.00	5,636.28	1,096.49	1,095.93	1,093.98		PVC	5	WTU	Nov-84	26.3
MW-101	NW of 1-1	10,021.30	4,969.30	1,107.70	1,107.57	1,105.57	2	SS	5	WTU	Aug-93	24.2
MW-102	N of 1-5	10,010.12	5,512.54	1,100.42	1,100.17	1,097.91	2	SS	5	WTU	Aug-93	21.4
MW-103	W of 4-1	9,591.39	4,927.97	1,096.59	1,096.22	1,093.96	2	SS	5	WTU	Aug-93	20.0
MW-104	4-1	9,576.51	5,079.94	1,100.73	1,099.81	1,098.50	2	SS	5	WTU	Sep-93	29.8
MW-105	4-1	9,539.58	5,136.64	1,101.64	1,101.32	1,099.55	2	SS	5	WTU	Sep-94	28.8
MW-106	4-3	9,549.29	5,296.02	1,103.58	1,102.88	1,101.00	2	SS	5	WTU	Sep-93	35.0
MW-107	4-6	9,550.10	5,570.26	1,098.65	1,098.27	1,096.02	2	SS	5	WTU	Sep-93	30.8
MW-108	5-8	9,549.95	5,779.50	1,092.70	1,091.96	1,090.14	2	SS	5	WTU	Sep-94	18.2
MW-109	4-9	9,586.47	5,874.83	1,087.77	1,087.42	1,085.32	2	SS	5	WTU	Jul-94	10.6
MW-110	5-9	9,641.97	6,124.53	1,087.21	1,086.87	1,084.49	2	SS	5	WTU	Aug-93	15.1
MW-111	6-3	9,395.45	5,296.51	1,099.97	1,099.67	1,097.55	2	SS	5	WTU	Sep-94	29.1
MW-113	6-3	9,392.18	5,825.52	1,088.64	1,088.46	1,085.41	2	SS	5	WTU	Aug-94	16.4
MW-114	7-3	9,280.30	5,265.10	1,097.63	1,097.27	1,095.12	2	SS	5	WTU	Aug-93	21.5
MW-115	7-6	9,299.48	5,637.84	1,102.41	1,101.83	1,100.38	2	SS	5	WTU	Aug-93	40.8
MW-116	S of 7-3	9,004.70	5,236.40	1,106.07	1,105.54	1,103.19	2	SS	5	WTU	Aug-93	26.4
MW-117	S of 7-6	9,014.47	5,616.11	1,124.19	1,123.97	1,121.35	2	SS	5	WTU	Aug-93	60.7
MW-118	7-9	9,171.40	5,970.27	1,098.68	1,098.38	1,096.37	2	SS	5	WTU	Aug-93	37.1
MW-201	NW of 1-1	10,020.44	4,952.70	1,107.73	1,107.52	1,105.96	2	SS	10	LIU	Sep-93	63.4
MW-202	N of 1-5	10,043.72	5,514.36	1,099.99	1,099.50	1,098.70	2	SS	10	UIU	Oct-93	49.9
MW-203	3-1	9,697.80	5,096.10	1,103.60	1,103.35	1,101.30	2	SS	10	UIU	Dec-93	53.5
MW-204	7-1	9,356.11	5,120.25	1,098.29	1,098.01	1,096.24	2	SS	10	UIU	Sep-93	46.3
MW-205	7-6	9,223.34	5,679.69	1,101.21	1,100.90	1,099.32	2	SS	10	UIU	Sep-93	53.1
MW-206	4-3	9,548.49	5,312.36	1,103.44	1,103.22	1,101.06	2	SS	10	UIU	Dec-93	63.3
MW-207	4-6	9,550.05	5,551.84	1,098.82	1,098.51	1,096.20	2	SS	10	UIU	Dec-93	49.8
MW-209	4-9	9,589.24	5,861.64	1,087.91	1,087.66	1,085.43	2	SS	10	UIU	Jul-94	37.7
MW-219	2-3	9,802.95	5,292.50	1,108.37	1,108.24	1,106.04	2	SS	10	UIU	Dec-93	63.0
MW-220	E of 1-9	9,893.22	5,964.42	1,091.23	1,090.92	1,089.47	2	SS	10	UIU	Jul-95	38.7
MW-223	6-5	9,356.57	5,466.72	1,097.81	1,098.37	1,095.48	2	SS	10	UIU	Jul-95	45.3
MW-224	6-8	9,401.54	5,813.55	1,088.87	1,089.41	1,086.15	2	SS	10	UIU	Jul-95	36.6

TABLE 6.1

SUMMARY OF WELL CONSTRUCTION DETAILS, COORDINATES AND ELEVATIONS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

	Location (1)			*Elevations (1)*								
Well ID	*Grid*	*Northing*	*Easting*	*Top of Casing*	*Top of Riser*	*Ground*	*Diameter*	*Screen Material*	*Length of Screen (feet)*	*Hydrogeologic Unit*	*Date Completed*	*Total Depth (ft. BTOR)*
MW-301	NW of 1-1	10,019.41	4,940.36	1,108.22	1,107.91	1,106.09	2	SS	10	LIU	Oct-93	81.4
MW-302	N of 1-5	10,056.98	5,513.56	1,100.66	1,100.39	1,098.89	2	SS	10	LIU	Oct-93	79.3
MW-303	3-1	9,670.84	5,094.67	1,103.41	1,103.15	1,100.73	2	SS	10	LIU	Dec-93	69.1
MW-304	7-2	9,353.32	5,135.15	1,098.06	1,097.73	1,095.86	2	SS	10	LIU	Sep-93	72.1
MW-305	7-6	9,235.38	5,687.49	1,101.95	1,101.22	1,099.58	2	SS	10	LIU	Sep-93	67.9
MW-306	4-3	9,539.22	5,331.57	1,103.34	1,103.14	1,100.78	2	SS	10	LIU	Dec-93	92.0
MW-307	4-6	9,524.78	5,556.53	1,099.17	1,098.83	1,096.60	2	SS	10	LIU	Dec-93	80.1
MW-309	4-9	9,587.06	5,854.74	1,087.91	1,087.81	1,085.66	2	SS	10	LIU	Jul-94	60.0
MW-319	2-3	9,793.32	5,292.50	1,108.20	1,108.07	1,105.94	2	SS	10	LIU	Dec-93	77.1
MW-320	E of 1-9	9,900.11	5,961.93	1,091.45	1,091.14	1,089.57	2	SS	10	LIU	Jul-95	101.0
MW-321	4-6	9,638.36	5,607.85	1,095.87	1,095.32	1,093.81	2	SS	10	LIU	Jul-95	69.4
MW-322	5-2	9,462.01	5,149.95	1,099.75	1,098.88	1,097.13	2	SS	10	LIU	Jul-95	70.0
MW-323	6-5	9,354.44	5,455.73	1,098.28	1,097.51	1,095.55	2	SS	10	LIU	Jul-95	83.8
MW-324	6-8	9,397.17	5,802.09	1,089.65	1,089.39	1,086.88	2	SS	10	LIU	Jul-95	89.9
MW-401	4-5	9,601.19	5,455.66	1,100.92	1,099.75	1,098.30	4	SS	20	USU	Dec-93	142.8
MW-402	5-9	9,522.16	5,955.04	1,090.69	1,089.90	1,087.83	4	SS	20	USU	Aug-94	131.0
MW-414	7-3	9,285.57	5,254.02	1,097.50	1,096.99	1,095.22	4	SS	20	USU	Oct-93	103.1
MW-415	7-6	9,290.00	5,624.74	1,102.66	1,102.25	1,100.14	4	SS	20	USU	Oct-93	89.5
MW-420	E of 1-9	9,908.04	5,960.12	1,091.79	1,091.66	1,089.80	4	SS	20	USU	Jul-95	122.5
MW-421	N of 1-5	10,034.02	5,524.37	1,100.50	1,099.93	1,098.69	4	SS	20	USU	Jun-95	104.5
MW-422	NW of 1-1	10,018.63	4,928.82	1,108.13	1,107.38	1,106.21	4	SS	20	USU	Jul-95	112.3
POT. WELL	1-7	9,920.24	5,703.53	1,099.42	1,099.34	1,096.72		OBH		Sharon	Aug-93	230.0

TABLE 6.1

SUMMARY OF WELL CONSTRUCTION DETAILS, COORDINATES AND ELEVATIONS
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD, OHIO

Well ID	Location (1)			Elevations (1)			Diameter	Screen Material	Length of Screen (feet)	Hydrogeologic Unit	Date Completed	Total Depth (ft. BTOR)
	Grid	Northing	Easting	Top of Casing	Top of Riser	Ground						
PZ-1	2-1	9,795.10	5,095.57	1,104.77	1,104.43	1,102.67		PVC		WTU	RI (2)	17.5
PZ-101	2-3	9,782.89	5,283.08	1,108.63	1,108.53	1,106.15	2	PVC	5	WTU	Sep-93	31.8
PZ-102	2-5	9,831.20	5,509.98	1,100.54	1,100.21	1,097.89	2	PVC	5	WTU	Sep-93	27.1
PZ-103	2-8	9,862.09	5,829.02	1,094.33	1,093.98	1,091.68	2	PVC	5	WTU	Sep-93	19.9
PZ-104	S of 7-3	9,195.17	5,325.76	1,098.07	1,097.54	1,095.60	2	PVC	5	WTU	Aug-93	25.6
PZ-105	S of 7-7	9,232.15	5,667.49	1,102.14	1,101.60	1,099.51	2	PVC	5	WTU	Aug-93	41.0
PZ-106	7-9	9,291.14	5,937.35	1,102.78	1,102.23	1,100.04	2	PVC	5	WTU	Sep-93	34.1
PZ-201	5-1	9,491.38	5,119.35	1,100.06	1,099.74	1,097.58	2	PVC	10	UIU	Oct-94	46.4
PZ-202	5-3	9,483.49	5,367.58	1,101.91	1,101.56	1,099.10	2	PVC	10	UIU	Dec-93	54.9
PZ-203	6-4	9,350.00	5,369.76	1,098.41	1,098.31	1,095.73	2	PVC	10	UIU	Oct-94	51.6
PZ-204	3-6	9,628.38	5,616.09	1,096.16	1,095.41	1,093.73	2	PVC	10	UIU	Dec-93	50.1
PZ-205	5-6	9,494.93	5,643.20	1,096.82	1,096.63	1,094.34	2	PVC	10	UIU	Dec-93	42.4
PZ-206	5-8	9,511.98	5,826.33	1,088.30	1,088.05	1,085.62	2	PVC	10	UIU	Aug-94	39.0
PZ-207	6-7	9,383.66	5,740.10	1,091.84	1,091.36	1,089.53	2	PVC	10	UIU	Aug-94	38.9
PZ-301	5-1	9,497.67	5,112.99	1,100.40	1,100.07	1,097.76	2	PVC	10	LIU	Oct-94	68.3
PZ-302	5-4	9,482.10	5,390.46	1,101.45	1,101.25	1,098.76	2	PVC	10	LIU	Dec-93	72.4
PZ-303	6-4	9,350.04	5,358.60	1,098.55	1,098.39	1,095.82	2	PVC	10	LIU	Oct-94	80.8
PZ-305	5-6	9,491.50	5,649.85	1,096.68	1,096.49	1,094.20	2	PVC	10	LIU	Dec-93	59.6
PZ-306	5-8	9,515.83	5,823.03	1,088.60	1,088.35	1,085.87	2	PVC	10	LIU	Aug-94	99.6
PZ-307	6-7	9,390.06	5,749.78	1,092.15	1,091.40	1,089.42	2	PVC	10	LIU	Aug-94	70.7
EW-1	5-1	9,472.40	5,139.85	1,099.96	1,100.23	1,097.54	6	PVC	50	IU	Sep-94	69.9
EW-2	6-3	9,340.42	6,142.96	1,097.80	1,097.80	1,095.41	6	PVC	50	IU	Sep-94	72.4
EW-3	6-5	9,356.57	5,466.72	1,097.81	1,098.37	1,095.48	6	PVC	76.5	IU	Sep-94	88.8
EW-4	6-6	9,368.92	5,627.68	1,095.15	1,096.25	1,093.17	6	PVC	40	IU	Aug-94	88.0
EW-5	6-8	9,401.54	5,813.55	1,088.87	1,089.41	1,086.15	6	PVC	50	IU	Aug-94	78.7
EW-6	5-8	9,533.92	5,824.98	1,088.80	1,089.54	1,086.33	6	PVC	90	IU	Aug-94	109.7

Note: (1) As surveyed by Wellert Corporation of Wadsworth, Ohio in August 1995.
Vertical and horizontal tolerance is plus or minus 0.02 feet.
(2) Installed during Remedial Investigation.

ATTACHMENT A

MONITORING WELL AND PIEZOMETER INSTRUMENTATION LOGS

DNR 7802.93

TYPE OR USE PEN
SELF TRANSCRIBING
PRESS HARD

WELL LOG AND DRILLING REPORT

Ohio Department of Natural Resources, Divison of Water
1939 Fountain Square Drive, Columbus, Ohio 43224 Phone (614) 265-6739

111441

Permit Number ______

COUNTY PORTAGE TOWNSHIP DEERFIELD SECTION/LOT No. [illegible] (CIRCLE ONE)

OWNER/BUILDER (CIRCLE ONE OR BOTH) SUMMIT NATIONAL TRUST PROPERTY ADDRESS 8128 SR 224, DEERFIELD (ADDRESS OF WELL LOCATION A)

LOCATION OF PROPERTY W. OF SR 225-ALLIANCE RD. ON SOUTH SIDE OF SR 224

CONSTRUCTION DETAILS

CASING Borehole Diameter 6X9 in.

1 Diameter [illegible]6 in. Length 80 ft. Wall Thickness SDR21 in.

2 Diameter ______ in. Length ______ ft. Wall Thickness ______ in.

Type: 1/2 Steel 1/2 Galv. 1/2 PVC (1 marked) 1/2 Other ______

Joints: 1/2 Threaded 1/2 Welded 1/2 Solvent (1 marked) 1/2 Other ______

Liner: Length ______ Type ______ Wall Thickness ______ in.

SCREEN

Type (wire wrapped, louvered, etc.) ______ Material ______

Length ______ ft. Diameter ______ in.

Set between ______ ft. and ______ ft. Slot ______

GROUT

Material BENSEAL Volume used [illegible]#

Method of installation PRESSURE W TREMIE PIPE

Depth: placed from 76 ft. to SURFACE ft.

GRAVEL PACK (Filter Pack)

Material ______ Volume used ______

Method of installation ______

Depth: placed from ______ ft. to ______ ft.

Pitless Device ☐ Adapter ☐ Preassembled unit

Use of Well GROUNDWATER TREATMENT [illegible]

☒ Rotary ☐ Cable ☐ Augered ☐ Driven ☐ Dug ☐ Other ______

Date of Completion JULY 22, [illegible]

WELL LOG*

INDICATE DEPTH(S) AT WHICH WATER IS ENCOUNTERED.

Show color, texture, hardness, and formation: sandstone, shale, limestone, gravel, clay, sand, etc.	From	To
FILL	0	1
BROWN CLAY W/COAL	1	15
GRAY SANDY SHALE	15	44
LIMESTONE	44	48
GRAY SANDY SHALE	48	61
LIMESTONE	61	62
GRAY SANDY SHALE	62	76
GRAY SANDSTONE	76	[illegible]
GRAY SANDY SHALE	[illegible]	[illegible]
GRAY SANDY SHALE	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
GRAY SANDY SHALE	[illegible]	[illegible]

WELL TEST

☐ Bailing ☐ Pumping* ☒ Other AIR

Test rate 6 gpm Duration of test [illegible] hrs

Drawdown ______ ft

Measured from: ☐ top of casing ☒ ground level ☐ Other ______

Static Level (depth to water) [illegible] ft. Date: [illegible]

Quality (clear, cloudy, taste, odor) CLEAR

*(Attach a copy of the pumping test record, per section 1521.05, ORC)

PUMP

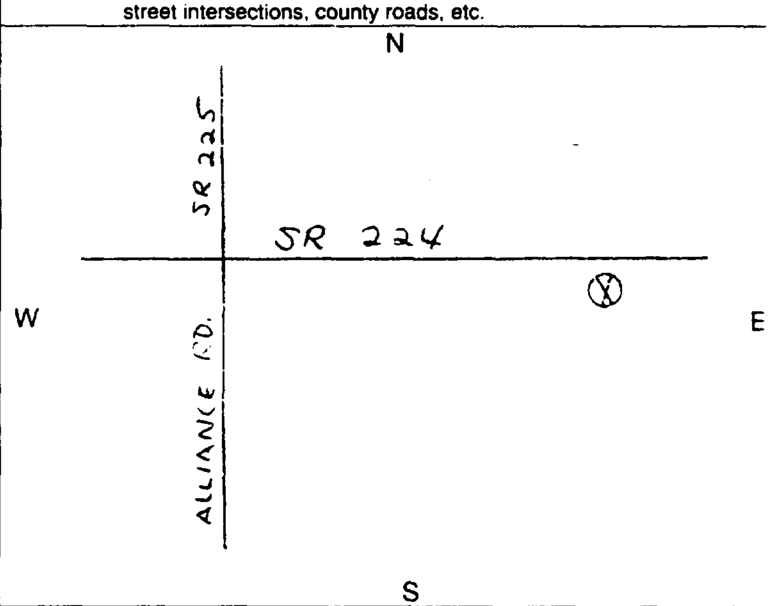
Type of pump GRISWOLD SAL-[illegible] Capacity 6 gpm

Pump set at 222 ft.

Pump installed by ENVIRONMENTAL CONTRACTORS, INC.

SKETCH SHOWING WELL LOCATION

Show distances well lies from numbered state highways, street intersections, county roads, etc.



*If additional space is needed to complete well log, use next consecutively numbered form.

Drilling Firm FRONTZ DRILLING, INC.

Address [illegible] ROAD

City, State, Zip WOOSTER, OHIO 44691

I hereby certify the information given is accurate and correct to the best of my knowledge.

Signed [signature]

Date ______

ODH Registration Number ______

Completion of this form is required by section 1521.05, Ohio Revised Code - file within 30 days after completion of drilling.

ORIGINAL COPY TO - ODNR, DIVISION OF WATER, 1939 FOUNTAIN SQ. DRIVE, COLS., OHIO 43224

Blue - Customer's copy Pink - Driller's copy Green - Local Health Dept copy

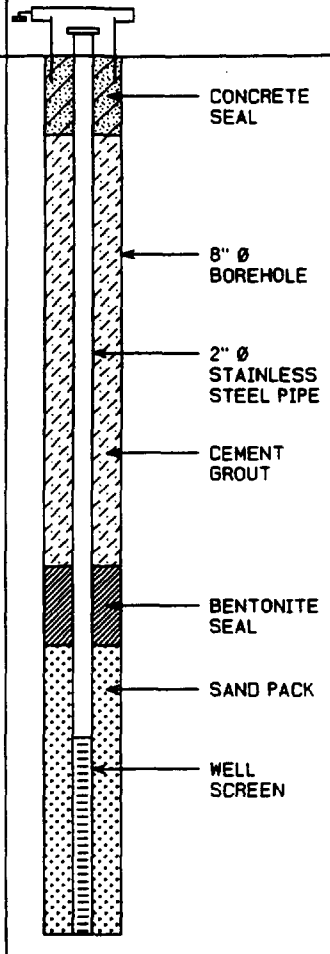
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-01)
Page 1 of 1

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-101
DATE COMPLETED: AUGUST 24, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1107.57* *1105.57*					
0	OVERBURDEN		CONCRETE SEAL				
2.5							
5.0			8" Ø BOREHOLE				
7.5			2" Ø STAINLESS STEEL PIPE				
10.0			CEMENT GROUT				
12.5			BENTONITE SEAL				
15.0	TOP OF SAND PACK	*1090.70*	SAND PACK				
17.5			WELL SCREEN				
20.0							
22.5	END OF HOLE	*1083.37*					
25.0							
27.5							
30.0							
32.5							



SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

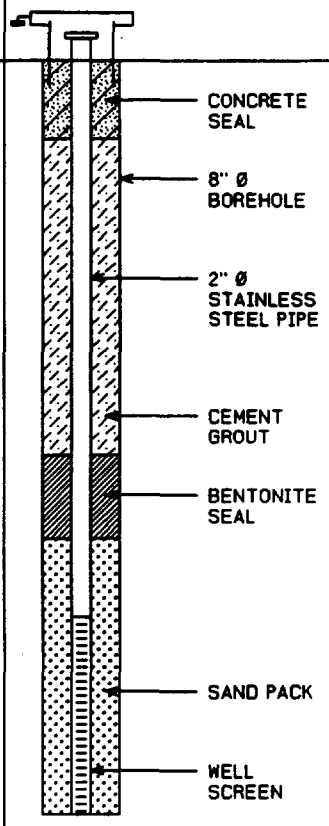
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-102
DATE COMPLETED: AUGUST 24, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1100.17* *1097.91*					
2.5	OVERBURDEN						
5.0							
7.5							
10.0							
12.5	TOP OF SAND PACK	*1085.81*					
15.0							
17.5							
20.0	END OF HOLE	*1078.81*					
22.5							
25.0							
27.5							
30.0							
32.5							



SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

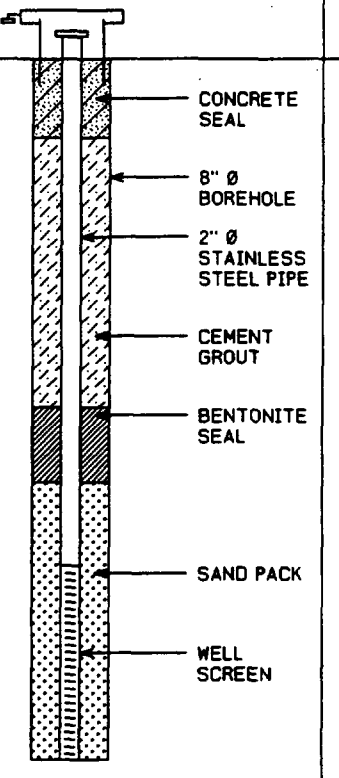
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-03)
Page 1 of 1

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-103
DATE COMPLETED: AUGUST 23, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1096.22* *1093.96*					
	OVERBURDEN						
-2.5							
-5.0							
-7.5							
-10.0							
	TOP OF SAND PACK	*1083.27*					
-12.5							
-15.0							
-17.5							
	END OF HOLE	*1076.27*					
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							



SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-66)
Page 1 of 1

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-104
DATE COMPLETED: JULY 10, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1099.81* *1098.50*					
	OVERBURDEN (FILL)		CONCRETE SEAL				
-2.5							
-5.0			6" Ø BOREHOLE				
-7.5			2" Ø STAINLESS STEEL PIPE				
-10.0			CEMENT/ BENTONITE GROUT				
-12.5							
-15.0			BENTONITE SEAL				
	TOP OF SAND PACK	*1082.06*	SAND PACK				
-17.5							
-20.0			WELL SCREEN				
-22.5							
-25.0							
-27.5							
	END OF HOLE	*1070.06*					
-30.0			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

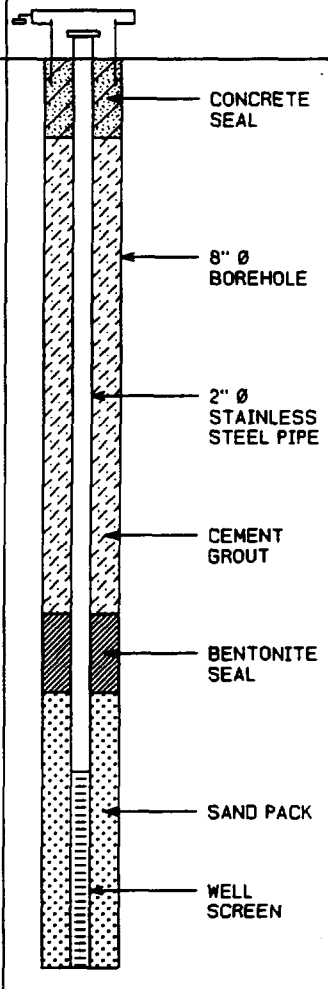
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-04)
Page 1 of 1

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-104 (ORIGINAL)
DATE COMPLETED: SEPTEMBER 7, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1094.34* *1091.26*					
0	OVERBURDEN						
2.5							
5.0							
7.5							
10.0							
12.5							
15.0							
	TOP OF SAND PACK	*1075.26*					
17.5							
20.0							
		1069.26					
22.5	BEDROCK						
	END OF HOLE	*1068.26*					
25.0							
27.5							
30.0							
32.5							



SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-05)
Page 1 of 1

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-105
DATE COMPLETED: SEPTEMBER 29, 1994
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1101.32* *1099.55*					
	OVERBURDEN						
-2.5			CONCRETE SEAL				
-5.0			8" Ø BOREHOLE				
-7.5							
-10.0			2" Ø STAINLESS STEEL PIPE				
-12.5							
-15.0			CEMENT GROUT				
-17.5							
-20.0			BENTONITE SEAL				
	TOP OF SAND PACK	*1078.49*					
-22.5							
-25.0			WELL SCREEN				
			SAND PACK				
-27.5	END OF HOLE	*1072.49*					
-30.0							
-32.5							

SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-06)
Page 1 of 2

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-106
DATE COMPLETED: SEPTEMBER 16, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1102.88* *1101.00*					
	OVERBURDEN						
-2.5			CONCRETE SEAL				
-5.0			8" Ø BOREHOLE				
-7.5							
-10.0							
-12.5			2" Ø STAINLESS STEEL PIPE				
-15.0							
-17.5			CEMENT GROUT				
-20.0							
-22.5							
-25.0			BENTONITE SEAL				
	TOP OF SAND PACK	*1074.41*					
-27.5			SAND PACK				
-30.0							
-32.5			WELL SCREEN				
	END OF HOLE	*1067.91*					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-106
DATE COMPLETED: SEPTEMBER 16, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
			SCREEN DETAILS Length: 5ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
37.5							
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							
67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-07)
Page 1 of 1

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-107
DATE COMPLETED: SEPTEMBER 16, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser)	*1098.27*					
	GROUND SURFACE	*1096.02*					
	OVERBURDEN		CONCRETE SEAL				
2.5							
5.0			8" Ø BOREHOLE				
7.5							
10.0			2" Ø STAINLESS STEEL PIPE				
12.5							
15.0							
17.5			CEMENT GROUT				
20.0			BENTONITE SEAL				
	TOP OF SAND PACK	*1074.49*					
22.5			SAND PACK				
25.0							
27.5			WELL SCREEN				
	END OF SCREEN	*1067.49*					
	END OF HOLE	*1067.02*					
30.0							
32.5							

SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

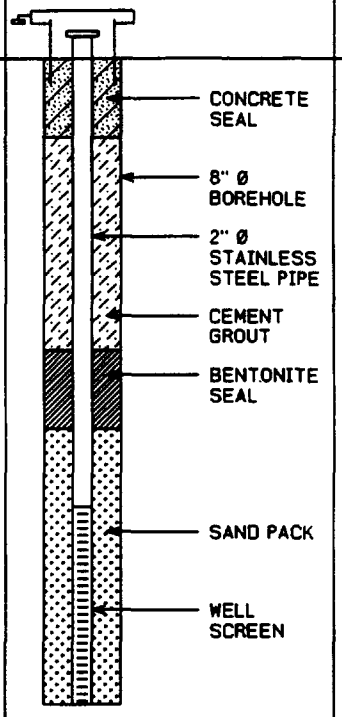
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-108
DATE COMPLETED: SEPTEMBER 28, 1994
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1091.96* *1090.14*					
	OVERBURDEN						
-2.5							
-5.0							
-7.5							
-10.0	TOP OF SAND PACK	*1080.76*					
-12.5							
-15.0							
	END OF HOLE	*1073.76*					
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							



SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

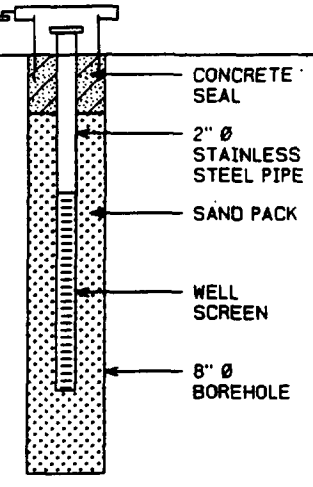
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-09)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-109
DATE COMPLETED: SEPTEMBER 27, 1994
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	1087.42 1085.32					
	OVERBURDEN						
	TOP OF SAND PACK	1083.84					
2.5							
5.0							
7.5	BEDROCK	1077.88					
	END OF SCREEN	1076.84					
10.0							
	END OF HOLE	1074.74					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							



SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

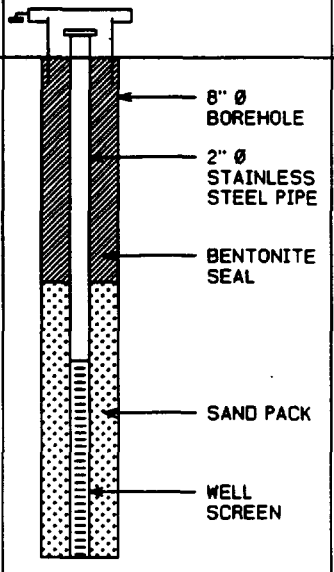
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-10)
Page 1 of 1

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-110
DATE COMPLETED: AUGUST 25, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1086.87* *1084.49*					
-2.5	OVERBURDEN						
-5.0	TOP OF SAND PACK	*1078.82*					
-7.5							
-10.0							
-12.5	END OF HOLE	*1071.82*					
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-111
DATE COMPLETED: SEPTEMBER 30, 1994
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1099.67* *1097.55*					
	OVERBURDEN		CONCRETE SEAL				
2.5							
5.0			8" Ø BOREHOLE				
7.5							
10.0			CEMENT GROUT				
12.5							
15.0			2" Ø STAINLESS STEEL PIPE				
17.5							
20.0	TOP OF SAND PACK	*1077.61*	BENTONITE SEAL				
22.5							
25.0			SAND PACK				
			WELL SCREEN				
27.5	END OF HOLE	*1070.51*					
30.0							
32.5							

SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

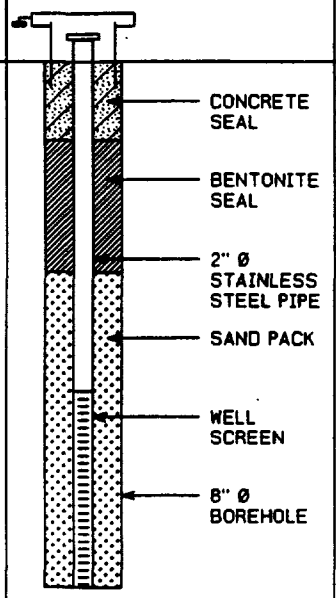
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-113
DATE COMPLETED: AUGUST 18, 1994
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1088.46* *1085.41*					
0	OVERBURDEN						
2.5							
5.0	TOP OF SAND PACK	*1080.06*					
7.5							
10.0							
12.5	END OF HOLE	*1072.06*					
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							



SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

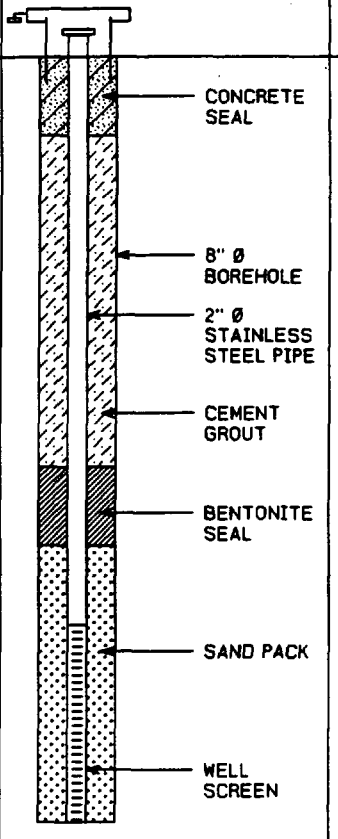
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-114
DATE COMPLETED: AUGUST 19, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser)	*1097.27*					
	GROUND SURFACE	*1095.12*					
	OVERBURDEN						
-2.5							
-5.0							
-7.5							
-10.0							
-12.5	TOP OF SAND PACK	*1082.79*					
-15.0							
-17.5							
-20.0	END OF HOLE	*1075.79*					
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							



SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-115
DATE COMPLETED: AUGUST 16, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

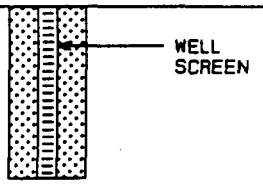
DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1101.83* *1100.38*					
	OVERBURDEN		CONCRETE SEAL				
-2.5							
-5.0			8" Ø BOREHOLE				
-7.5							
-10.0			2" Ø STAINLESS STEEL PIPE				
-12.5							
-15.0			CEMENT GROUT				
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0			BENTONITE SEAL				
-32.5	TOP OF SAND PACK	*1068.38*	SAND PACK				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-115
DATE COMPLETED: AUGUST 16, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5							
-40.0	END OF HOLE	1061.05	SCREEN DETAILS Length: 5ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-42.5							
-45.0							
-47.5							
-50.0							
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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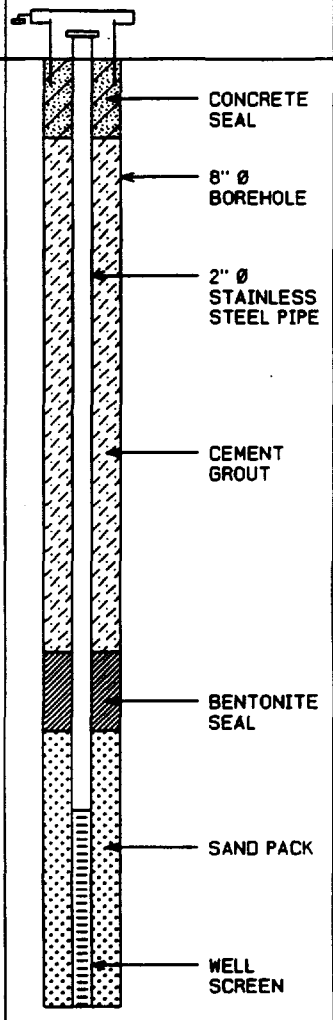
PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-116
DATE COMPLETED: AUGUST 20, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1105.54* *1103.19*					
	OVERBURDEN						
-2.5							
-5.0							
-7.5							
-10.0							
-12.5							
-15.0							
-17.5	TOP OF SAND PACK	*1086.14*					
-20.0							
-22.5							
	END OF HOLE	*1079.14*					
-25.0							
-27.5							
-30.0							
-32.5							



SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-117
DATE COMPLETED: AUGUST 23, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1123.97* *1121.35*					
	OVERBURDEN		CONCRETE SEAL				
2.5							
5.0							
7.5							
10.0			8" Ø BOREHOLE				
12.5							
15.0							
17.5			2" Ø STAINLESS STEEL PIPE				
20.0							
22.5							
25.0							
27.5			CEMENT GROUT				
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-117
DATE COMPLETED: AUGUST 23, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5							
40.0			CEMENT GROUT				
42.5							
45.0							
47.5							
50.0			BENTONITE SEAL				
	TOP OF SAND PACK	1070.32					
52.5							
55.0			SAND PACK				
57.5			WELL SCREEN				
	END OF HOLE	1063.32					
60.0							
62.5							
65.0							
67.5							

SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-118
DATE COMPLETED: AUGUST 27, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1098.38* *1096.37*					
0	OVERBURDEN		CONCRETE SEAL				
2.5							
5.0							
7.5							
10.0			8" Ø BOREHOLE				
12.5							
15.0			2" Ø STAINLESS STEEL PIPE				
17.5							
20.0			CEMENT GROUT				
22.5							
25.0							
27.5	TOP OF SAND PACK	*1061.37*	BENTONITE SEAL				
30.0							
32.5			SAND PACK				
35.0	END OF HOLE	*1061.28*	WELL SCREEN				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-118
DATE COMPLETED: AUGUST 27, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
-40.0			SCREEN DETAILS Length: 5ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-42.5							
-45.0							
-47.5							
-50.0							
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							
-70.0							
-72.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-18)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-201
DATE COMPLETED: SEPTEMBER 30, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	1107.52 1105.96					
0	OVERBURDEN		CONCRETE SEAL				
2.5							
5.0			10" Ø BOREHOLE				
7.5							
10.0			6" CASING				
12.5							
15.0			2" Ø STAINLESS STEEL PIPE				
17.5							
20.0			CEMENT GROUT				
22.5	BEDROCK	1083.20					
25.0	END OF 6" Ø CASING	1081.20	6" CASING SET				
27.5							
30.0			6" Ø BOREHOLE				
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-201
DATE COMPLETED: SEPTEMBER 30, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5			6" Ø BOREHOLE				
-40.0			CEMENT GROUT				
-42.5							
-45.0							
-47.5			BENTONITE SEAL				
	TOP OF SAND PACK	1057.67					
-50.0							
-52.5			SAND PACK				
-55.0							
-57.5			WELL SCREEN				
-60.0							
	END OF HOLE	1044.17					
-62.5							
-65.0							
-67.5							

SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-202
DATE COMPLETED: OCTOBER 14, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1099.50* *1098.70*					
0	OVERBURDEN (TILL)		CONCRETE SEAL				
2.5							
			10" Ø BOREHOLE				
5.0							
7.5							
			6" Ø BLACK STEEL PIPE				
10.0							
12.5							
			CEMENT GROUT				
15.0							
17.5							
20.0		*1078.53*					
	BEDROCK, shale, silty, laminated, highly fractured, gray						
	END OF 6" Ø CASING	*1077.03*	6" CASING SET				
22.5							
25.0							
			6" Ø BOREHOLE				
27.5	- coal						
	- clay stone, gray/black						
30.0	- silt stone, light gray		2" Ø STAINLESS STEEL PIPE				
32.5							
	- black shale		BENTONITE SEAL				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-202
DATE COMPLETED: OCTOBER 14, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5	TOP OF SAND PACK	1062.10	6" Ø BOREHOLE SAND PACK WELL SCREEN				
-40.0							
-42.5							
-45.0							
-47.5							
-50.0	END OF HOLE	1049.60	SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-203
DATE COMPLETED: DECEMBER 13, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1103.35* *1101.30*					
	OVERBURDEN		CONCRETE SEAL				
-2.5							
-5.0							
-7.5			10" Ø BOREHOLE				
-10.0							
-12.5			6" Ø STEEL CASING				
-15.0							
-17.5							
-20.0			2" Ø STAINLESS STEEL PIPE				
-22.5							
-25.0							
-27.5			CEMENT GROUT				
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-203
DATE COMPLETED: DECEMBER 13, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5	BEDROCK	1063.00	CEMENT GROUT; BENTONITE SEAL				
-40.0	TOP OF SAND PACK	1061.81					
	END OF 6" Ø CASING	1061.00	6" CASING SET				
-42.5			WELL SCREEN				
-45.0			SAND PACK				
-47.5			6" Ø BOREHOLE				
-50.0	END OF HOLE	1049.81					
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							

<u>SCREEN DETAILS</u>
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

<u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-204
DATE COMPLETED: SEPTEMBER 30, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

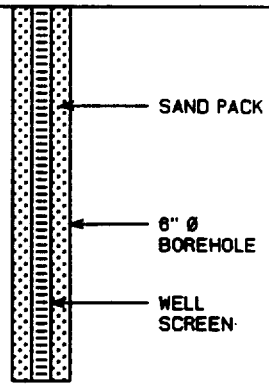
DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1098.01* *1096.24*					
	OVERBURDEN		CONCRETE SEAL				
-2.5							
-5.0			CEMENT GROUT				
-7.5							
-10.0			10" Ø BOREHOLE				
-12.5							
-15.0			2" Ø STAINLESS STEEL PIPE				
-17.5							
-20.0			6" Ø BLACK STEEL CASING				
-22.5	BEDROCK	*1073.74*					
	END OF 6" Ø CASING	*1072.24*	6" CASING SET				
-25.0							
-27.5			6" Ø BOREHOLE				
-30.0			BENTONITE SEAL				
-32.5	TOP OF SAND PACK	*1063.76*	SAND PACK				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-204
DATE COMPLETED: SEPTEMBER 30, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5			 SAND PACK; 6" Ø BOREHOLE; WELL SCREEN				
-40.0							
-42.5							
-45.0	END OF HOLE	1051.76	SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-47.5							
-50.0							
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							

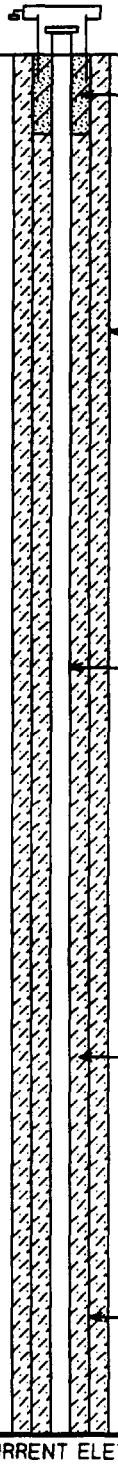
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-205
DATE COMPLETED: SEPTEMBER 28, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1100.90* *1099.32*					
	OVERBURDEN		CONCRETE SEAL				
-2.5							
-5.0							
-7.5			10" Ø BOREHOLE				
-10.0							
-12.5							
-15.0			2" Ø STAINLESS STEEL PIPE				
-17.5							
-20.0							
-22.5							
-25.0			CEMENT GROUT				
-27.5							
-30.0							
-32.5			6" Ø BLACK STEEL CASING				



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-205
DATE COMPLETED: SEPTEMBER 28, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5	TOP OF SAND PACK	1061.35	BENTONITE SEAL				
	BEDROCK	1060.32					
40.0	END OF 6" Ø CASING	1058.32	6" CASING SET				
42.5							
45.0			SAND PACK				
47.5			6" Ø BOREHOLE				
50.0			WELL SCREEN				
	END OF HOLE	1047.85					
52.5			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
55.0							
57.5							
60.0							
62.5							
65.0							
67.5							

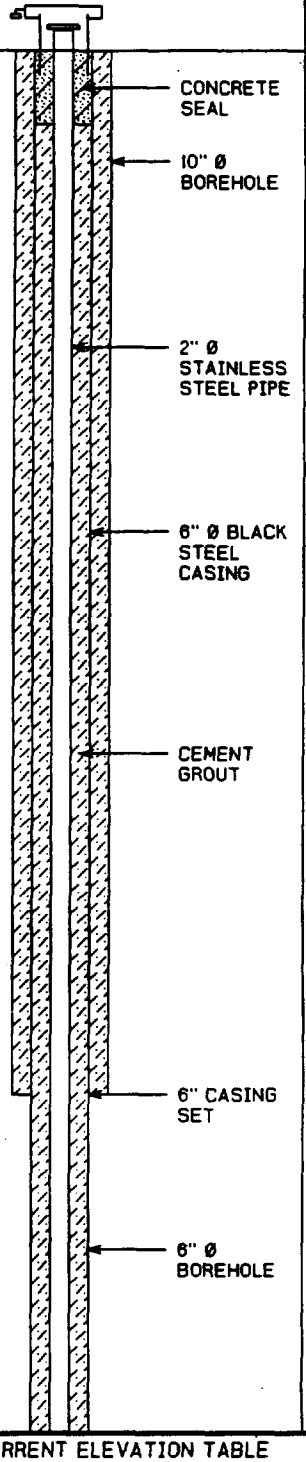
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-206
DATE COMPLETED: DECEMBER 11, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1103.22* *1101.06*					
	OVERBURDEN						
25.0	BEDROCK	*1074.78*					
27.5	END OF 6" Ø CASING	*1072.78*					



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-206
DATE COMPLETED: DECEMBER 11, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
40.0			CEMENT GROUT				
42.5							
45.0			2" Ø STAINLESS STEEL PIPE				
47.5			BENTONITE SEAL				
	TOP OF SAND PACK	1051.92					
50.0	- shale, black/gray						
	- limestone, black						
52.5	- shale, black		SAND PACK				
	- sandy shale (siltstone), gray						
55.0			6" Ø BOREHOLE				
57.5							
60.0			WELL SCREEN				
	END OF HOLE	1039.92					
62.5							
65.0							
67.5							
70.0							
72.5							

SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-207
DATE COMPLETED: DECEMBER 15, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1098.51* *1096.20*					
	OVERBURDEN		CONCRETE SEAL				
-2.5							
-5.0			10" Ø BOREHOLE				
-7.5							
-10.0			6" Ø BOREHOLE				
-12.5							
-15.0			2" Ø STAINLESS STEEL CASING				
-17.5							
-20.0			6" Ø BLACK SURFACE CASING				
-22.5							
-25.0			CEMENT GROUT				
-27.5							
-30.0							
-32.5	BEDROCK	*1063.70*	BENTONITE SEAL				
-35.0	TOP OF SAND PACK	*1061.69*					
	END OF 6" Ø CASING	*1061.20*	6" CASING SET				

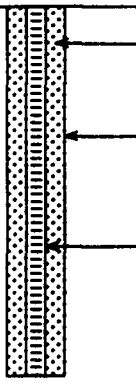
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-207
DATE COMPLETED: DECEMBER 15, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
40.0			SAND PACK				
42.5			6" Ø BOREHOLE				
45.0			WELL SCREEN				
47.5	END OF HOLE	1048.69					
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							
67.5							
70.0							
72.5							



SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-209
DATE COMPLETED: JULY 28, 1994
DRILLING METHOD: HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser)	*1087.66*					
	GROUND SURFACE	*1085.43*					
	OVERBURDEN		CEMENT/ BENTONITE GROUT				
-2.5							
-5.0							
-7.5			12" Ø BOREHOLE				
-10.0							
	BEDROCK	*1074.43*					
-12.5							
-15.0	END OF 6" Ø CASING	*1070.43*	6" CASING SET				
-17.5							
-20.0			BENTONITE SEAL				
	TOP OF SAND PACK	*1064.43*					
-22.5							
-25.0			2" Ø STAINLESS STEEL PIPE				
-27.5			SAND PACK				
-30.0			6" Ø COREHOLE				
-32.5							
		1050.66	WELL SCREEN				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-209
DATE COMPLETED: JULY 28, 1994
DRILLING METHOD: HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	LIMESTONE	*1049.99*					
	END OF HOLE		SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-37.5							
-40.0							
-42.5							
-45.0							
-47.5							
-50.0							
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-219
DATE COMPLETED: DECEMBER 6, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO/K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1108.24* *1106.04*					
	OVERBURDEN						
-2.5			10" Ø BOREHOLE				
-5.0							
-7.5			6" Ø STEEL CASING				
-10.0							
-12.5							
-15.0							
-17.5			2" Ø STAINLESS STEEL PIPE				
-20.0							
-22.5							
-25.0			CEMENT/ BENTONITE GROUT				
-27.5							
	BEDROCK	*1077.65*					
-30.0							
-32.5	- shale, sandy, coal, gray						
	END OF 6" Ø CASING	*1072.35*	6" STEEL CASING SET				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-219
DATE COMPLETED: DECEMBER 6, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO/K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5			6" Ø BOREHOLE				
-40.0			CEMENT/ BENTONITE GROUT				
-42.5							
-45.0			BENTONITE SEAL				
-47.5							
	TOP OF SAND PACK	1057.23					
-50.0			SAND PACK				
-52.5							
-55.0			WELL SCREEN				
-57.5							
	- limestone						
-60.0							
	END OF HOLE	1045.23					
-62.5			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-65.0							
-67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-220
DATE COMPLETED: JULY 5, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

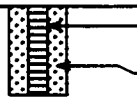
DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1090.92* *1089.47*					
	OVERBURDEN						
2.5			10" Ø BOREHOLE				
5.0							
7.5			6" Ø STEEL CASING				
10.0							
12.5			CEMENT/ BENTONITE GROUT				
15.0			2" Ø STAINLESS STEEL PIPE				
	BEDROCK	*1073.22*					
17.5							
	END OF 6" Ø CASING	*1071.22*	6" STEEL CASING SET				
20.0							
22.5			6" Ø BOREHOLE				
25.0							
	TOP OF SAND PACK	*1064.22*	SAND PACK				
27.5							
30.0							
32.5			WELL SCREEN				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-220
DATE COMPLETED: JULY 5, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5	END OF HOLE	1052.22	 WELL SCREEN; SAND PACK SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							
67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-223 (EW-3)
DATE COMPLETED: JULY 15, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser)	*1098.37*					
	GROUND SURFACE	*1095.48*					
	OVERBURDEN						
2.5							
5.0			CEMENT/ BENTONITE GROUT				
7.5							
10.0							
12.5			2" Ø STAINLESS STEEL PIPE				
15.0							
17.5							
20.0			8" Ø BOREHOLE				
22.5							
25.0							
27.5							
30.0	TOP OF SAND PACK	*1065.55*	BENTONITE SEAL				
32.5			SAND PACK				
			WELL SCREEN				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-223 (EW-3)
DATE COMPLETED: JULY 15, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5			WELL SCREEN				
-40.0			SAND PACK				
-42.5	END OF SCREEN	1053.12					
-45.0	LIMESTONE	1050.55					
-47.5		1048.55					
-50.0			8" Ø BOREHOLE				
-52.5							
-55.0							
-57.5							
-60.0			CEMENT/ BENTONITE GROUT				
-62.5							
-65.0							
-67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-223 (EW-3)
DATE COMPLETED: JULY 15, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
72.5			8" Ø BOREHOLE				
75.0							
77.5							
80.0			CEMENT/ BENTONITE GROUT				
82.5							
85.0							
87.5	END OF HOLE	1008.41	SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
90.0							
92.5							
95.0							
97.5							
100.0							
102.5							

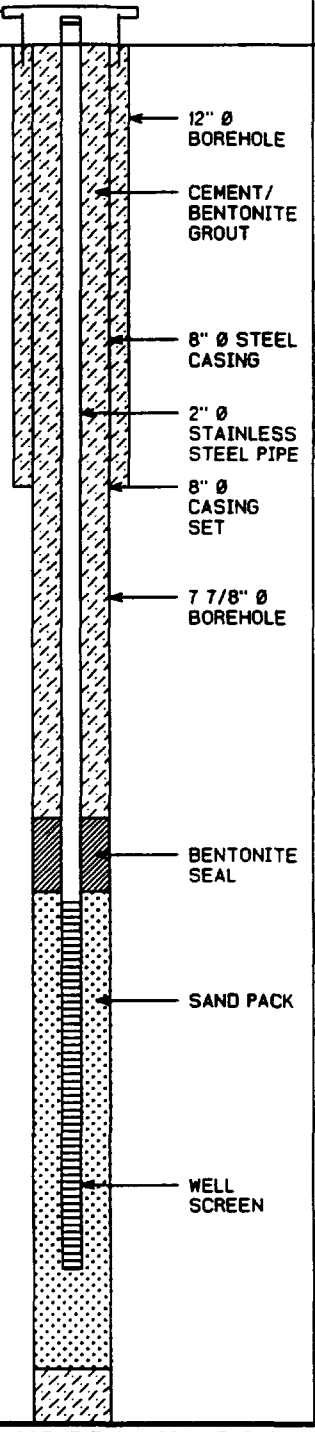
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-224 (EW-5)
DATE COMPLETED: JULY 13, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	1089.41 1086.15					
	OVERBURDEN						
-2.5							
-5.0							
-7.5							
-10.0	BEDROCK	1076.15					
-12.5	END OF 8" Ø CASING	1074.15					
-15.0							
-17.5							
-20.0							
-22.5	TOP OF SAND PACK	1063.15					
-25.0							
-27.5							
-30.0							
-32.5	END OF SCREEN	1052.85					
-35.0							



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-224 (EW-5)
DATE COMPLETED: JULY 13, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	LIMESTONE	1048.15					
-40.0							
		1045.15	BENTONITE GROUT				
-42.5							
-45.0							
-47.5							
-50.0							
-52.5							
-55.0							
-57.5							
-60.0			7 7/8" Ø BOREHOLE				
-62.5							
-65.0							
-67.5							
	END OF HOLE	1017.97					
-70.0			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-72.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-301
DATE COMPLETED: OCTOBER 4, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1107.91* *1106.09*					
	OVERBURDEN (TILL)						
-2.5			14" Ø BOREHOLE				
-5.0							
-7.5			10" Ø STEEL SURFACE CASING				
-10.0							
-12.5							
-15.0			CEMENT GROUT				
-17.5							
-20.0							
-22.5		*1083.25*					
	BEDROCK						
-25.0	END OF 10" Ø CASING	*1080.95*	10" CASING SET				
-27.5							
-30.0			6" BLACK STEEL CASING				
-32.5			10" Ø BOREHOLE				

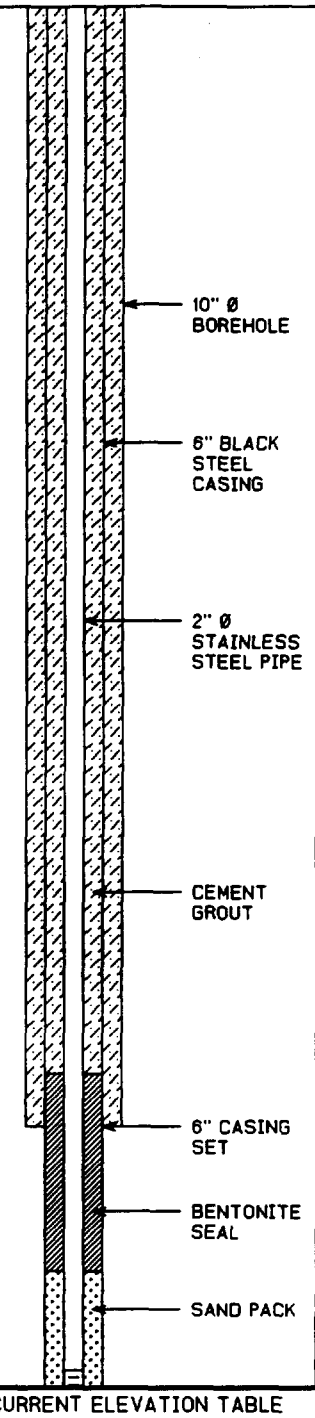
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-301
DATE COMPLETED: OCTOBER 4, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5							
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5	END OF 6" Ø CASING	1042.75					
65.0							
67.5	TOP OF SAND PACK	1039.05					



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-301
DATE COMPLETED: OCTOBER 4, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-72.5	- silty shale mix, light gray		6" Ø BOREHOLE SAND PACK WELL SCREEN				
-75.0							
-77.5	- coal						
-80.0	END OF HOLE	*1026.53*	SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-82.5							
-85.0							
-87.5							
-90.0							
-92.5							
-95.0							
-97.5							
-100.0							
-102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-302
DATE COMPLETED: OCTOBER 14, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1100.39* *1098.89*					
0	OVERBURDEN (TILL), silt and fine to medium sand (ML,SW), some gravel, little clay (moist, brown), (Natural)						
2.5			14" Ø BOREHOLE				
5.0							
7.5			10" Ø CASING				
10.0							
12.5							
15.0			2" Ø STAINLESS STEEL PIPE				
17.5							
20.0	BEDROCK	*1079.32*					
	END OF 10" Ø CASING	*1077.32*	10" CASING SET				
22.5							
25.0			CEMENT GROUT				
27.5							
30.0			6" Ø CASING				
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-302
DATE COMPLETED: OCTOBER 14, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5			6" Ø CASING				
-40.0			10" Ø BOREHOLE				
-42.5							
-45.0			2" Ø STAINLESS STEEL PIPE				
-47.5							
	- limestone						
-50.0	END OF 6" Ø CASING	1048.32	6" CASING SET				
-52.5							
-55.0			6" Ø BOREHOLE				
-57.5			CEMENT GROUT				
-60.0							
-62.5							
-65.0			BENTONITE SEAL				
	TOP OF SAND PACK	1033.14					
-67.5	- coal		SAND PACK				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-302
DATE COMPLETED: OCTOBER 14, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
72.5			SAND PACK				
75.0			6" Ø BOREHOLE				
77.5	END OF HOLE	1021.14	WELL SCREEN				
80.0			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
82.5							
85.0							
87.5							
90.0							
92.5							
95.0							
97.5							
100.0							
102.5							

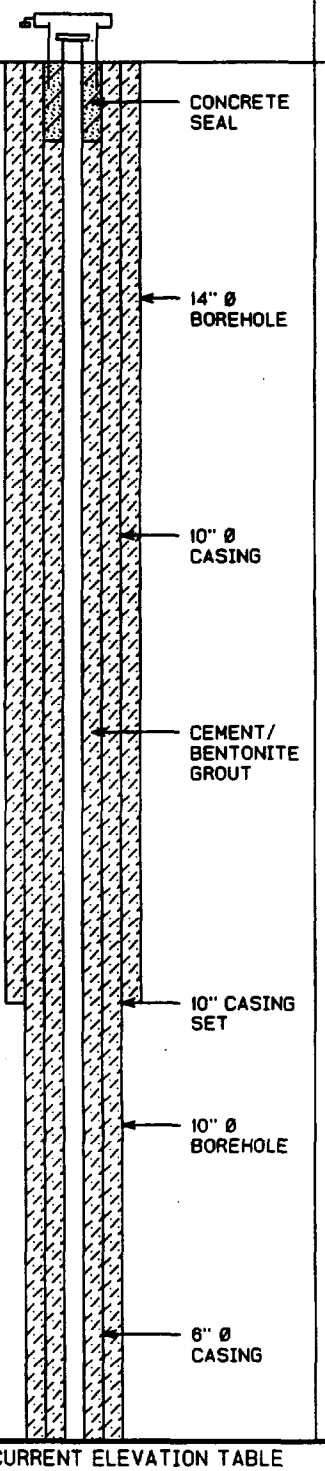
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-303
DATE COMPLETED: DECEMBER 21, 1994
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1103.15* *1100.73*					
	OVERBURDEN						
20.0	BEDROCK	*1079.35*					
22.5	END OF 10" Ø CASING	*1076.85*					



2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
22.5
25.0
27.5
30.0
32.5

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⧩ STATIC WATER LEVEL ⧩

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-303
DATE COMPLETED: DECEMBER 21, 1994
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5			6" Ø CASING				
40.0			2" Ø STAINLESS STEEL PIPE				
42.5							
45.0			CEMENT/ BENTONITE GROUT				
47.5							
50.0							
52.5	END OF 6" Ø CASING	1048.45	6" CASING SET				
55.0	TOP OF SAND PACK	1046.01	BENTONITE SEAL				
57.5			SAND PACK				
60.0							
62.5			6" Ø BOREHOLE				
65.0			WELL SCREEN				
67.5	END OF HOLE	1034.01					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-303
DATE COMPLETED: DECEMBER 21, 1994
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
72.5			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
75.0							
77.5							
80.0							
82.5							
85.0							
87.5							
90.0							
92.5							
95.0							
97.5							
100.0							
102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-303
DATE COMPLETED: DECEMBER 21, 1994
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
-72.5			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-75.0							
-77.5							
-80.0							
-82.5							
-85.0							
-87.5							
-90.0							
-92.5							
-95.0							
-97.5							
-100.0							
-102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-304
DATE COMPLETED: SEPTEMBER 30, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1097.73* *1095.86*					
0	OVERBURDEN		CONCRETE SEAL				
-2.5			14" Ø BOREHOLE				
-5.0							
-7.5							
-10.0			10" Ø STEEL CASING				
-12.5							
-15.0			CEMENT/ BENTONITE GROUT				
-17.5							
-20.0							
-22.5	BEDROCK	*1073.36*					
	END OF 10" Ø CASING	*1071.86*	10" CASING SET				
-25.0							
-27.5			10" Ø BOREHOLE				
-30.0							
-32.5			6" Ø CASING				
-35.0							

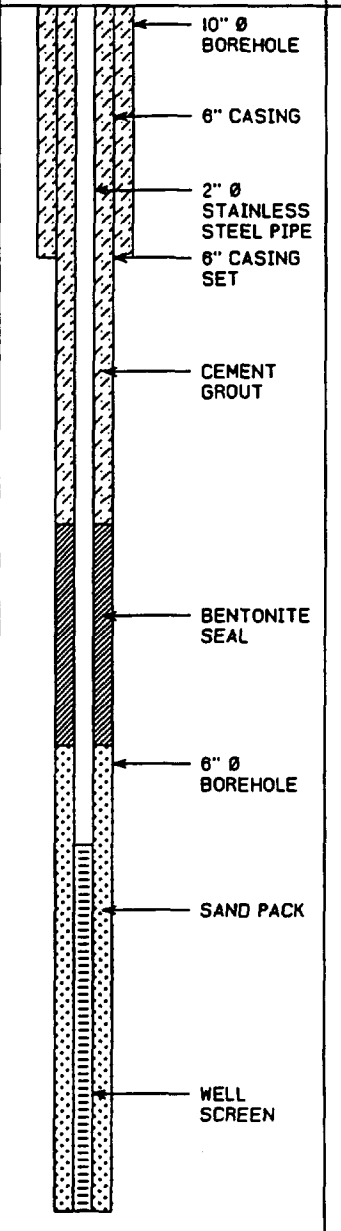
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-304
DATE COMPLETED: SEPTEMBER 30, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
40.0							
42.5							
45.0	END OF 6" Ø CASING - limestone	1051.56					
47.5							
50.0							
52.5							
55.0							
57.5	TOP OF SAND PACK	1038.36					
60.0							
62.5							
65.0							
67.5							
70.0	END OF HOLE	1025.65					
72.5							



SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-305
DATE COMPLETED: SEPTEMBER 28, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1101.22* *1099.58*					
	OVERBURDEN						
-2.5			14" Ø BOREHOLE				
-5.0							
-7.5							
-10.0			10" Ø SURFACE CASING				
-12.5							
-15.0			2" Ø STAINLESS STEEL PIPE				
-17.5							
-20.0							
-22.5							
-25.0			CEMENT GROUT				
-27.5							
-30.0			6" Ø CASING				
-32.5							

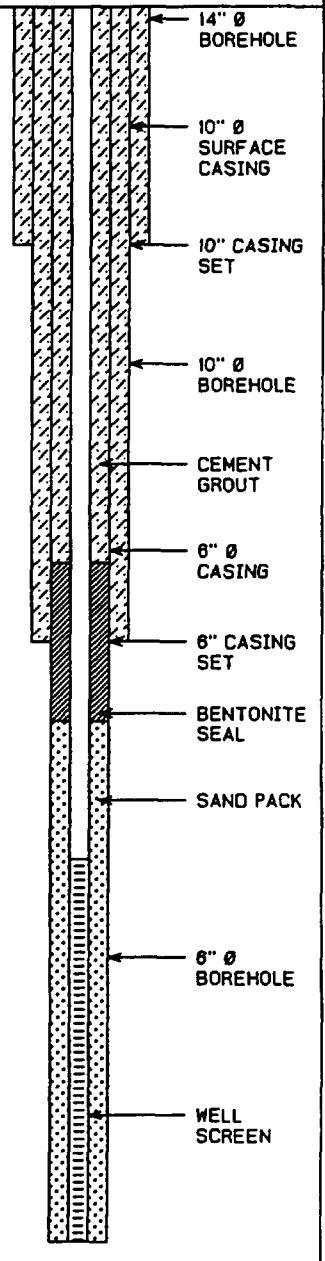
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-305
DATE COMPLETED: SEPTEMBER 28, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5							
	BEDROCK	1060.58					
40.0							
	END OF 10" Ø CASING	1058.58					
42.5							
45.0							
47.5							
50.0							
	END OF 6" Ø CASING	1048.58					
52.5							
	TOP OF SAND PACK	1046.58					
55.0							
57.5							
60.0							
62.5							
65.0							
	END OF HOLE	1033.37					
67.5							



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-305
DATE COMPLETED: SEPTEMBER 28, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
-72.5			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-75.0							
-77.5							
-80.0							
-82.5							
-85.0							
-87.5							
-90.0							
-92.5							
-95.0							
-97.5							
-100.0							
-102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-306
DATE COMPLETED: DECEMBER 16, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1103.14* *1100.78*					
	OVERBURDEN		CONCRETE SEAL				
-2.5			14" Ø BOREHOLE				
-5.0							
-7.5							
-10.0			10" Ø CASING				
-12.5							
-15.0			2" Ø STAINLESS STEEL PIPE				
-17.5							
-20.0							
-22.5			CEMENT GROUT				
-25.0							
-27.5							
-30.0			6" Ø CASING				
-32.5							
	BEDROCK	*1067.16*					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-306
DATE COMPLETED: DECEMBER 16, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	END OF 10" Ø CASING	1065.15	10" CASING SET				
-37.5							
-40.0			10" Ø BOREHOLE				
-42.5							
-45.0							
-47.5			6" CASING				
-50.0							
-52.5							
-55.0			CEMENT GROUT				
-57.5							
-60.0							
-62.5	END OF 6" Ø CASING	1038.76	6" CASING SET				
-65.0			2" Ø STAINLESS STEEL CASING				
-67.5							
			6" Ø BOREHOLE				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-306
DATE COMPLETED: DECEMBER 16, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
72.5			6" Ø BOREHOLE				
75.0			CEMENT GROUT				
77.5	TOP OF SAND PACK	1023.12	BENTONITE SEAL				
80.0							
82.5			SAND PACK				
85.0							
87.5			WELL SCREEN				
90.0	END OF HOLE	1011.12					
92.5							
95.0							
97.5							
100.0							
102.5							

SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-307
DATE COMPLETED: DECEMBER 22, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1098.83* *1096.60*					
	OVERBURDEN		CONCRETE SEAL				
-2.5							
-5.0			14" Ø BOREHOLE				
-7.5							
-10.0			10" Ø CASING				
-12.5							
-15.0			6" Ø CASING				
-17.5							
-20.0							
-22.5							
-25.0			CEMENT GROUT				
-27.5							
-30.0			2" Ø STAINLESS STEEL PIPE				
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-307
DATE COMPLETED: DECEMBER 22, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	BEDROCK	1060.88					
-37.5	END OF 10" Ø CASING	1059.20	10" CASING SET				
-40.0			10" Ø BOREHOLE				
-42.5							
-45.0			6" Ø CASING				
-47.5							
-50.0							
-52.5			2" Ø STAINLESS STEEL CASING				
-55.0							
-57.5	END OF 6" Ø CASING	1038.40	6" CASING SET CEMENT GROUT				
-60.0							
-62.5							
-65.0	TOP OF SAND PACK	1030.69	BENTONITE SEAL				
-67.5			6" Ø BOREHOLE				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-307
DATE COMPLETED: DECEMBER 22, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-72.5			SAND PACK				
-75.0			WELL SCREEN				
-77.5			6" ø BOREHOLE				
	END OF HOLE	1018.69					
-80.0			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-82.5							
-85.0							
-87.5							
-90.0							
-92.5							
-95.0							
-97.5							
-100.0							
-102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-309
DATE COMPLETED: JULY 27, 1994
DRILLING METHOD: 10 ¼ HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1087.81* *1085.66*					
0	OVERBURDEN						
-2.5			CONCRETE SEAL				
-5.0			14" Ø BOREHOLE				
-7.5							
-10.0			10" Ø STEEL CASING				
-12.5	BEDROCK	*1074.16*	6" Ø STEEL CASING				
	END OF 10" Ø CASING	*1071.66*	10" CASING SET				
-15.0							
-17.5							
-20.0			2" Ø STAINLESS STEEL PIPE				
-22.5			10" Ø BOREHOLE				
-25.0			6" Ø CASING				
-27.5							
-30.0			CEMENT/ BENTONITE GROUT				
-32.5							

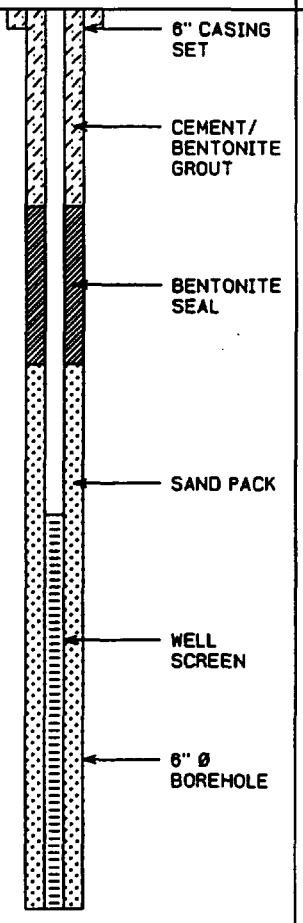
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-309
DATE COMPLETED: JULY 27, 1994
DRILLING METHOD: 10 ¼ HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	END OF 6" Ø CASING	1050.16					
-37.5							
-40.0							
-42.5							
	TOP OF SAND PACK	1041.66					
-45.0							
-47.5							
-50.0							
-52.5							
-55.0							
-57.5							
	END OF HOLE	1027.86					
-60.0							
-62.5							
-65.0							
-67.5							



SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

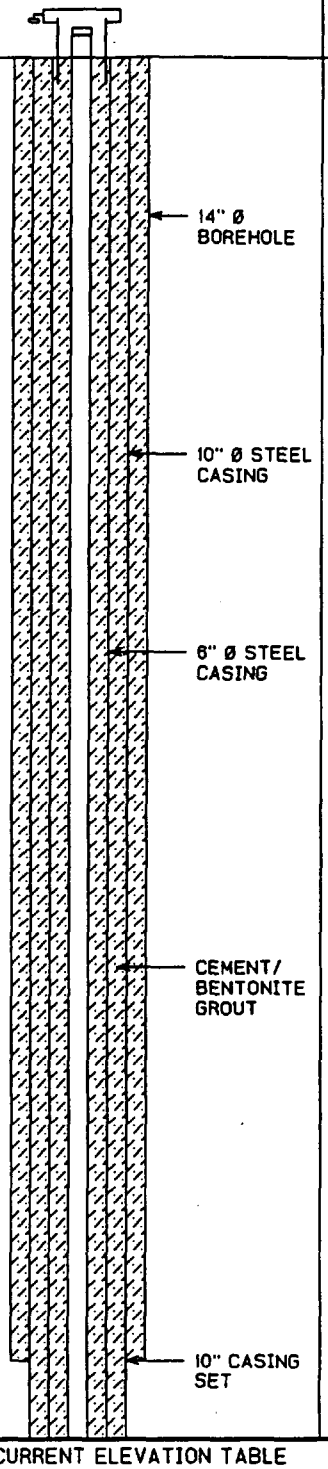
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-319
DATE COMPLETED: DECEMBER 23, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO/K.WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1108.07* *1105.94*					
	OVERBURDEN						
-2.5							
-5.0							
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0	BEDROCK	*1075.96*					
-32.5	END OF 10" Ø CASING - shale, sandy, coal, gray	*1072.96*					



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-319
DATE COMPLETED: DECEMBER 23, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO/K.WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5			2" Ø STAINLESS STEEL PIPE				
-40.0							
-42.5			CEMENT/ BENTONITE GROUT				
-45.0							
-47.5			6" Ø CASING				
-50.0							
-52.5							
-55.0			10" Ø BOREHOLE				
-57.5							
-60.0							
	- limestone						
-62.5			BENTONITE SEAL				
	END OF 6" CASING, TOP OF SAND PACK	*1042.96*	6" CASING SET				
	- shale, sandy, silt-stone						
-65.0			SAND PACK				
-67.5			WELL SCREEN				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-319
DATE COMPLETED: DECEMBER 23, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO/K.WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-72.5			SAND PACK				
-75.0	END OF HOLE	1030.96	WELL SCREEN				
-77.5			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-80.0							
-82.5							
-85.0							
-87.5							
-90.0							
-92.5							
-95.0							
-97.5							
-100.0							
-102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-320
DATE COMPLETED: JULY 12, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1091.14* *1089.57*					
2.5	OVERBURDEN		14" Ø BOREHOLE				
5.0							
7.5			10" Ø STEEL CASING				
10.0							
12.5			CEMENT/ BENTONITE GROUT				
15.0							
17.5	BEDROCK	*1073.16*					
	END OF 10" Ø CASING	*1071.16*	10" STEEL CASING SET				
20.0							
22.5			6" Ø STEEL CASING				
25.0							
27.5			10" Ø BOREHOLE				
30.0							
32.5			2" Ø STAINLESS STEEL PIPE				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-320
DATE COMPLETED: JULY 12, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5			10" Ø BOREHOLE				
	LIMESTONE	1051.16	6" STEEL CASING SET				
40.0	END OF 6" Ø CASING	1051.16					
42.5							
45.0			2" Ø STAINLESS STEEL PIPE				
47.5							
50.0			CEMENT/ BENTONITE GROUT				
52.5							
55.0							
57.5							
60.0			6" Ø BOREHOLE				
62.5							
65.0							
67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-320
DATE COMPLETED: JULY 12, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-72.5			2" Ø STAINLESS STEEL PIPE				
-75.0			CEMENT/ BENTONITE GROUT				
-77.5							
-80.0			6" Ø BOREHOLE				
-82.5							
-85.0			BENTONITE SEAL				
-87.5	TOP OF SAND PACK	1002.16	SAND PACK				
-90.0							
-92.5			WELL SCREEN				
-95.0							
-97.5							
-100.0	END OF HOLE	990.16					
-102.5							

SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⧩ STATIC WATER LEVEL ⧩

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-321
DATE COMPLETED: JULY 13, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser)	*1095.32*					
	GROUND SURFACE	*1093.81*					
	OVERBURDEN						
-2.5							
-5.0			16" Ø BOREHOLE				
-7.5							
-10.0			CEMENT/ BENTONITE GROUT				
-12.5							
-15.0							
-17.5			2" Ø STAINLESS STEEL PIPE				
-20.0							
-22.5	BEDROCK	*1071.81*					
	END OF 10" Ø CASING	*1069.81*	10" CASING SET				
-25.0							
-27.5			10" Ø BOREHOLE				
-30.0							
-32.5			6" Ø CASING				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⊽ STATIC WATER LEVEL ⊻

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-321
DATE COMPLETED: JULY 13, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5			10" Ø BOREHOLE				
-40.0			CEMENT/ BENTONITE GROUT				
-42.5							
	LIMESTONE	1049.81					
-45.0	END OF 6" Ø CASING	1048.56	6" CASING SET				
-47.5							
-50.0							
-52.5			BENTONITE SEAL				
	TOP OF SAND PACK	1039.81					
-55.0							
-57.5			SAND PACK				
-60.0							
-62.5			6" Ø BOREHOLE				
-65.0			WELL SCREEN				
-67.5							
	END OF HOLE	1025.97					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-321
DATE COMPLETED: JULY 13, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
-72.5			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-75.0							
-77.5							
-80.0							
-82.5							
-85.0							
-87.5							
-90.0							
-92.5							
-95.0							
-97.5							
-100.0							
-102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-322
DATE COMPLETED: JULY 11, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1098.88* *1097.13*					
	OVERBURDEN						
-2.5							
-5.0			14" Ø BOREHOLE				
-7.5			CEMENT/ BENTONITE GROUT				
-10.0							
-12.5							
-15.0							
-17.5			2" Ø STAINLESS STEEL PIPE				
-20.0							
-22.5		*1073.84*	10" CASING SET				
	BEDROCK	*1073.84*					
-25.0	END OF 10" Ø CASING		10" Ø BOREHOLE				
-27.5							
-30.0							
-32.5			6" Ø CASING				

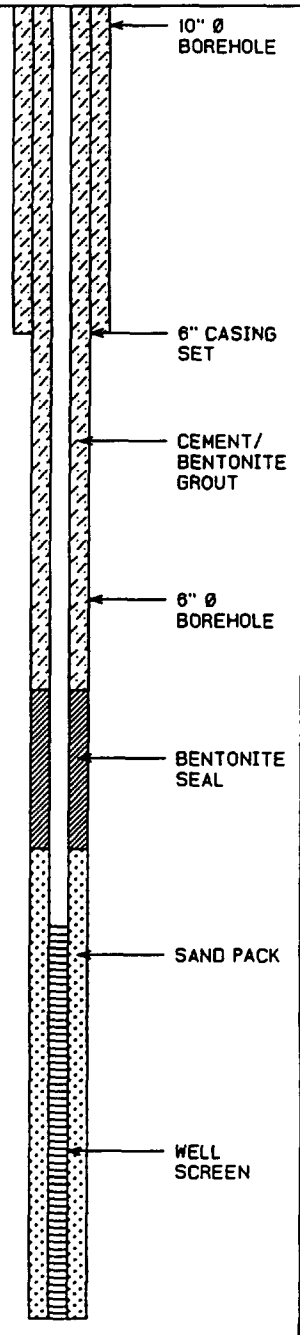
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-322
DATE COMPLETED: JULY 11, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5							
-40.0							
-42.5							
	LIMESTONE	1053.84					
	END OF 6" Ø CASING	1053.84					
-45.0							
-47.5							
-50.0							
-52.5							
-55.0							
	TOP OF SAND PACK	1040.84					
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							
	END OF HOLE	1028.84					



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-322
DATE COMPLETED: JULY 11, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
-72.5			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-75.0							
-77.5							
-80.0							
-82.5							
-85.0							
-87.5							
-90.0							
-92.5							
-95.0							
-97.5							
-100.0							
-102.5							

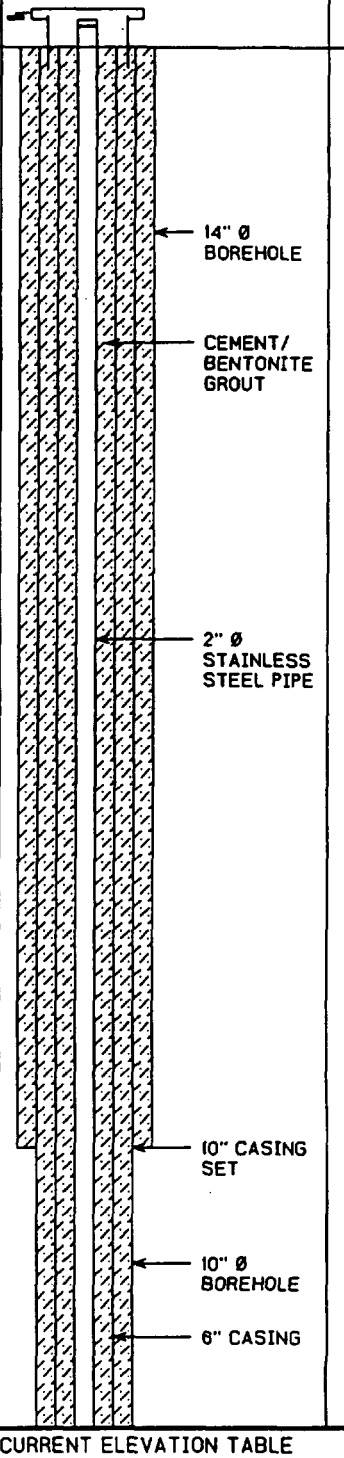
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-323
DATE COMPLETED: JULY 12, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1097.51* *1095.55*					
	OVERBURDEN						
27.5	BEDROCK	*1067.71*					
30.0	END OF 10" Ø CASING	*1065.71*					



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-323
DATE COMPLETED: JULY 12, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-40.0			10" Ø BOREHOLE				
-42.5			CEMENT/ BENTONITE GROUT				
-45.0	LIMESTONE	1050.71					
-47.5	END OF 6" Ø CASING	1047.95	6" CASING SET				
-50.0							
-52.5			6" Ø BOREHOLE				
-55.0							
-57.5							
-60.0			2" Ø STAINLESS STEEL PIPE				
-62.5							
-65.0							
-67.5			BENTONITE SEAL				
-70.0	TOP OF SAND PACK	1025.71					
-72.5			SAND PACK				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-323
DATE COMPLETED: JULY 12, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-77.5			SAND PACK WELL SCREEN 6" Ø BOREHOLE				
-80.0							
-82.5	END OF HOLE	1013.71	SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
-85.0							
-87.5							
-90.0							
-92.5							
-95.0							
-97.5							
-100.0							
-102.5							
-105.0							
-107.5							
-110.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-324
DATE COMPLETED: JULY 7, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1089.39* *1086.88*					
2.5	OVERBURDEN		14" Ø BOREHOLE				
5.0							
7.5			CEMENT/ BENTONITE GROUT				
10.0							
12.5		*1073.88*					
	BEDROCK						
15.0	END OF 10" Ø CASING	*1071.88*	10" CASING SET				
17.5			2" Ø STAINLESS STEEL PIPE				
20.0							
22.5							
25.0			10" Ø BOREHOLE				
27.5							
30.0			6" CASING				
32.5							
35.0		*1052.38*					
	LIMESTONE						
	END OF 6" Ø CASING	*1050.88*	6" CASING SET				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-324
DATE COMPLETED: JULY 7, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-40.0							
-42.5							
-45.0			CEMENT/ BENTONITE GROUT				
-47.5							
-50.0			6" Ø BOREHOLE				
-52.5							
-55.0			2" Ø STAINLESS STEEL PIPE				
-57.5							
-60.0							
-62.5			BENTONITE SEAL				
-65.0	TOP OF SAND PACK	1022.88	SAND PACK				
-67.5							
-70.0		—					
-72.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-324
DATE COMPLETED: JULY 7, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
77.5			SAND PACK				
80.0			WELL SCREEN				
82.5							
85.0			6" Ø BOREHOLE				
87.5	END OF HOLE	999.53	SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: Stainless Steel Sand Pack Material: Sand				
90.0							
92.5							
95.0							
97.5							
100.0							
102.5							
105.0							
107.5							
110.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-401
DATE COMPLETED: DECEMBER 20, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1099.75* *1098.30*					
	OVERBURDEN						
2.5							
5.0			16" Ø BOREHOLE				
7.5							
10.0			12" Ø STEEL CASING				
12.5							
15.0			CEMENT/ BENTONITE GROUT				
17.5							
20.0							
22.5							
25.0			8" Ø STEEL CASING				
27.5							
30.0							
32.5							
35.0	END OF 12" Ø CASING	*1063.96*	12" Ø CASING SET				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-401
DATE COMPLETED: DECEMBER 20, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-40.0							
-42.5			12" Ø BOREHOLE				
-45.0							
-47.5							
-50.0			8" Ø STEEL CASING				
-52.5							
-55.0							
-57.5							
-60.0			CEMENT/ BENTONITE GROUT				
-62.5							
-65.0							
-67.5							
-70.0							
-72.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-401
DATE COMPLETED: DECEMBER 20, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
77.5			12" Ø BOREHOLE				
80.0							
82.5							
85.0			8" Ø STEEL CASING				
87.5							
90.0							
92.5			CEMENT/ BENTONITE GROUT				
95.0							
97.5							
100.0	END OF 8" Ø CASING	998.00	8" CASING SET				
102.5							
105.0			8" Ø BOREHOLE				
107.5							
110.0			4" Ø STEEL CASING				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-401
DATE COMPLETED: DECEMBER 20, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
115.0							
117.5			CEMENT/ BENTONITE GROUT; 4" Ø STEEL CASING				
120.0			8" Ø BOREHOLE				
122.5	END OF 4" Ø CASING	976.00	4" CASING SET				
125.0							
127.5			4" Ø COREHOLE				
130.0							
132.5			WELL SCREEN				
135.0							
137.5							
140.0							
	END OF HOLE	957.00					
142.5			SCREEN DETAILS Length: 20ft Diameter: 4" Slot Size: #10 Material: Stainless Steel				
145.0							
147.5							

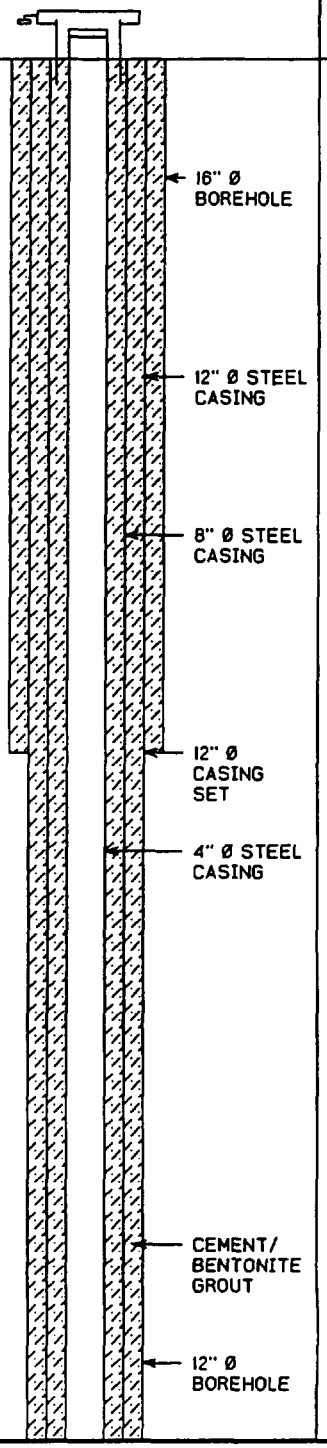
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-402
DATE COMPLETED: AUGUST 1, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K.WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1089.90* *1087.83*					
	OVERBURDEN						
15.0	BEDROCK	*1071.83*					
17.5	END OF 12" Ø CASING	*1070.33*					



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-402
DATE COMPLETED: AUGUST 1, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K.WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5			CEMENT/ BENTONITE GROUT				
-40.0	END OF 8" Ø CASING	1047.83	8" Ø CASING SET				
-42.5							
-45.0							
-47.5			8" Ø BOREHOLE				
-50.0							
-52.5							
-55.0							
-57.5			4" Ø STEEL CASING				
-60.0							
-62.5							
-65.0		—					
-67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-402
DATE COMPLETED: AUGUST 1, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K.WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
72.5							
75.0			8" Ø BOREHOLE				
77.5							
80.0							
82.5							
85.0							
87.5			4" Ø STEEL CASING				
90.0							
92.5							
95.0							
97.5			CEMENT/ BENTONITE GROUT				
100.0							
102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-402
DATE COMPLETED: AUGUST 1, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K.WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
107.5			8" Ø BOREHOLE				
110.0			CEMENT/ BENTONITE GROUT				
	END OF 4" Ø CASING	976.83	4" Ø CASING SET				
112.5							
115.0			4" Ø COREHOLE				
117.5							
120.0							
122.5			WELL SCREEN				
125.0							
127.5							
	END OF HOLE	958.86					
130.0			SCREEN DETAILS Length: 20ft Diameter: 4" Slot Size: #10 Material: Stainless Steel				
132.5							
135.0							
137.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-414
DATE COMPLETED: OCTOBER 25, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1096.99* *1095.22*					
	OVERBURDEN						
-2.5			16" Ø BOREHOLE				
-5.0							
-7.5							
-10.0			12" Ø STEEL CASING				
-12.5							
-15.0			8" Ø STEEL CASING				
-17.5							
-20.0			CEMENT/ BENTONITE GROUT				
-22.5	END OF 12" Ø CASING	*1072.22*	12" Ø CASING SET				
-25.0			4" Ø STAINLESS STEEL PIPE				
-27.5							
-30.0			12" Ø BOREHOLE				
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-414
DATE COMPLETED: OCTOBER 25, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5							
40.0			8" Ø STEEL CASING				
42.5							
45.0							
	END OF 8" Ø CASING	1049.22	8" Ø CASING SET				
47.5							
50.0			4" Ø STAINLESS STEEL PIPE				
52.5							
55.0							
57.5							
60.0			CEMENT/ BENTONITE GROUT				
62.5							
65.0			8" Ø BOREHOLE				
67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-414
DATE COMPLETED: OCTOBER 25, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
72.5			8" Ø BOREHOLE				
75.0							
77.5			4" Ø STAINLESS STEEL PIPE				
80.0							
82.5			CEMENT/ BENTONITE GROUT				
	END OF 4" Ø CASING	1011.89	4" CASING SET				
85.0							
87.5							
90.0			WELL SCREEN				
92.5							
95.0							
97.5			4" Ø COREHOLE				
100.0							
	END OF HOLE	993.89					
102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-414
DATE COMPLETED: OCTOBER 25, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
107.5			SCREEN DETAILS Length: 20ft Diameter: 4" Slot Size: #10 Material: Stainless Steel				
110.0							
112.5							
115.0							
117.5							
120.0							
122.5							
125.0							
127.5							
130.0							
132.5							
135.0							
137.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-415
DATE COMPLETED: OCTOBER 23, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1102.25* *1100.14*					
	OVERBURDEN						
-2.5							
-5.0			16" Ø BOREHOLE				
-7.5							
-10.0			12" Ø STEEL CASING				
-12.5							
-15.0							
-17.5			8" Ø STEEL CASING				
-20.0							
-22.5							
-25.0							
-27.5			CEMENT/ BENTONITE GROUT				
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-415
DATE COMPLETED: OCTOBER 23, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5			CEMENT/ BENTONITE GROUT				
-40.0							
-42.5	END OF 12" Ø CASING	1058.75	12" Ø CASING SET				
-45.0			12" Ø BOREHOLE				
-47.5							
-50.0			8" Ø STEEL CASING				
-52.5	END OF 8" Ø CASING	1047.95	8" CASING SET				
-55.0							
-57.5			8" Ø BOREHOLE				
-60.0							
-62.5							
-65.0			4" Ø STEEL CASING				
-67.5	END OF 4" Ø CASING	1031.75	4" CASING SET				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-415
DATE COMPLETED: OCTOBER 23, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
72.5							
75.0			WELL SCREEN				
77.5			4" Ø COREHOLE				
80.0							
82.5							
85.0							
87.5	END OF HOLE	1012.75	SCREEN DETAILS Length: 20ft Diameter: 4" Slot Size: #10 Material: Stainless Steel				
90.0							
92.5							
95.0							
97.5							
100.0							
102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

(L-73)
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PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-420
DATE COMPLETED: JULY 5, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1091.66* *1089.80*					
	OVERBURDEN						
-2.5			16" Ø BOREHOLE				
-5.0							
-7.5							
-10.0			12" Ø STEEL CASING				
-12.5							
-15.0							
		1073.80					
	BEDROCK						
-17.5							
	END OF 12" Ø CASING	*1071.80*	12" CASING SET				
-20.0							
-22.5			CEMENT/ BENTONITE GROUT				
-25.0			12" Ø BOREHOLE				
-27.5			8" Ø STEEL CASING				
-30.0							
-32.5			4" Ø STEEL CASING				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-420
DATE COMPLETED: JULY 5, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5			12" Ø BOREHOLE				
	LIMESTONE	1051.40					
-40.0	END OF 8" Ø CASING	1049.30	8" CASING SET				
-42.5	END OF LIMESTONE	1047.30					
-45.0			CEMENT/ BENTONITE GROUT				
-47.5							
-50.0							
-52.5							
-55.0			8" Ø BOREHOLE				
-57.5							
-60.0							
-62.5			4" Ø STEEL CASING				
-65.0							
-67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-420
DATE COMPLETED: JULY 5, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-72.5			CEMENT/ BENTONITE GROUT				
-75.0							
-77.5							
-80.0							
-82.5			8" Ø BOREHOLE				
-85.0							
-87.5	SHALE	1001.80					
-90.0							
-92.5			4" Ø STEEL CASING				
-95.0							
-97.5							
	COAL	991.12					
	SANDSTONE	990.62					
-100.0	END OF 4" Ø CASING	989.30	4" CASING SET				
-102.5			WELL SCREEN				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-420
DATE COMPLETED: JULY 5, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
107.5							
110.0			WELL SCREEN				
112.5							
115.0							
117.5							
120.0							
	END OF HOLE	969.12	SCREEN DETAILS Length: 20ft Diameter: 4" Slot Size: #10 Material: Stainless Steel				
122.5							
125.0							
127.5							
130.0							
132.5							
135.0							
137.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-421
DATE COMPLETED: JUNE 19, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1099.93* *1098.69*					
0	OVERBURDEN						
-2.5			16" Ø BOREHOLE				
-5.0							
-7.5							
-10.0			12" Ø STEEL CASING				
-12.5							
-15.0			CEMENT/ BENTONITE GROUT				
-17.5							
		1079.69					
-20.0	BEDROCK						
	END OF 12" Ø CASING	*1077.69*	12" CASING SET				
-22.5							
-25.0			12" Ø BOREHOLE				
-27.5			8" Ø STEEL CASING				
-30.0							
-32.5			4" Ø STEEL CASING				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-421
DATE COMPLETED: JUNE 19, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5			12" Ø BOREHOLE				
-40.0			8" Ø STEEL CASING				
-42.5							
-45.0							
-47.5	LIMESTONE	1051.69	CEMENT/ BENTONITE GROUT				
-50.0							
-52.5							
-55.0	END OF 8" Ø CASING	1044.19	8" CASING SET				
-57.5			8" Ø BOREHOLE				
-60.0							
-62.5							
-65.0			4" Ø STEEL CASING				
-67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-421
DATE COMPLETED: JUNE 19, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
72.5			CEMENT/ BENTONITE GROUT				
75.0							
77.5			8" Ø BOREHOLE				
80.0							
82.5			4" Ø STEEL CASING				
85.0	END OF 4" Ø CASING	1014.43	4" CASING SET				
87.5							
90.0							
92.5			WELL SCREEN				
95.0							
97.5							
100.0							
102.5	END OF HOLE	995.43					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-421
DATE COMPLETED: JUNE 19, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
107.5			SCREEN DETAILS Length: 19ft Diameter: 4" Slot Size: #10 Material: Stainless Steel				
110.0							
112.5							
115.0							
117.5							
120.0							
122.5							
125.0							
127.5							
130.0							
132.5							
135.0							
137.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-422
DATE COMPLETED: JULY 3, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1107.38* *1106.21*					
	OVERBURDEN						
-2.5			16" Ø BOREHOLE				
-5.0							
-7.5							
-10.0			12" Ø STEEL CASING				
-12.5							
-15.0			CEMENT/ BENTONITE GROUT				
-17.5							
-20.0			4" Ø STEEL CASING				
	BEDROCK	*1085.21*					
-22.5							
	END OF 12" Ø CASING	*1082.21*	12" CASING SET				
-25.0							
-27.5			12" Ø BOREHOLE				
-30.0		—					
-32.5			8" Ø STEEL CASING				

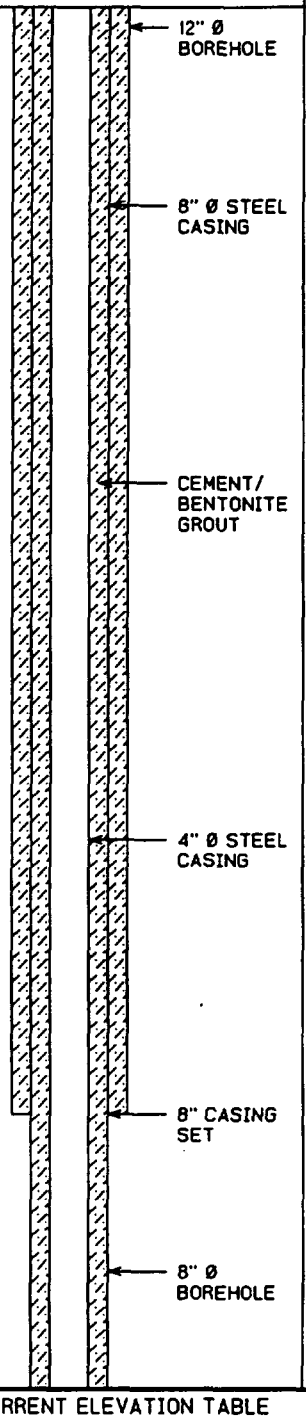
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-422
DATE COMPLETED: JULY 3, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5							
-40.0							
-42.5							
-45.0							
-47.5							
-50.0							
-52.5							
-55.0							
-57.5							
-60.0							
-62.5	LIMESTONE	*1044.21*					
	END OF 8" Ø CASING	*1043.21*					
-65.0							
-67.5							



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-422
DATE COMPLETED: JULY 3, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
72.5			CEMENT/ BENTONITE GROUT				
75.0			8" Ø BOREHOLE				
77.5							
80.0							
82.5							
85.0			4" Ø STEEL CASING				
87.5							
	COAL	1017.61					
90.0		1016.61					
92.5	END OF 4" Ø CASING	1014.21	4" CASING SET				
95.0							
97.5			WELL SCREEN				
100.0		—					
102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⧩ STATIC WATER LEVEL ⧩

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER SHARON)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: MW-422
DATE COMPLETED: JULY 3, 1995
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
107.5			WELL SCREEN				
110.0							
	END OF HOLE	995.08	SCREEN DETAILS Length: 10ft Diameter: 4" Slot Size: #10 Material: Stainless Steel				
112.5							
115.0							
117.5							
120.0							
122.5							
125.0							
127.5							
130.0							
132.5							
135.0							
137.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-101
DATE COMPLETED: SEPTEMBER 16, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser)	*1108.53*					
	GROUND SURFACE	*1106.15*					
	OVERBURDEN (FILL)		CONCRETE SEAL				
-2.5							
-5.0			8" Ø BOREHOLE				
-7.5							
-10.0			2" Ø PVC PIPE				
-12.5							
-15.0			CEMENT GROUT				
-17.5							
-20.0							
-22.5	TOP OF SAND PACK	*1083.69*	BENTONITE SEAL				
-25.0			SAND PACK				
-27.5							
-30.0	END OF HOLE	*1076.69*	WELL SCREEN				
-32.5							

SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

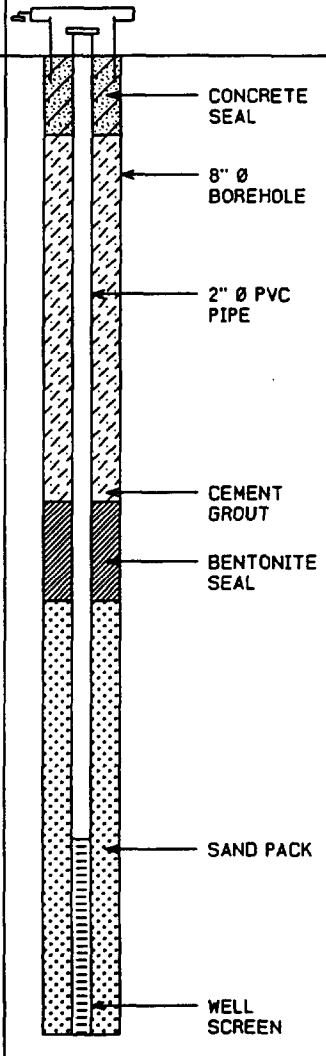
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-34)
Page 1 of 1

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-102 (R)
DATE COMPLETED: NOVEMBER 22, 1994
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: S. HAYLE

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1100.21* *1097.89*					
	OVERBURDEN						
12.5	TOP OF SAND PACK	*1084.16*					
25.0	END OF HOLE	*1073.16*					



SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack Material: Sand

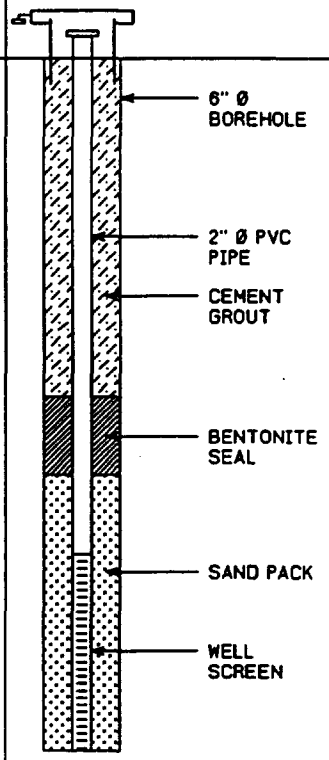
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-103
DATE COMPLETED: SEPTEMBER 17, 1993
DRILLING METHOD: 3 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1093.98* *1091.68*					
	OVERBURDEN						
-2.5							
-5.0							
-7.5							
-10.0							
	TOP OF SAND PACK	*1081.13*					
-12.5							
-15.0							
-17.5							
	END OF HOLE	*1074.13*					
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							



SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack Material: Sand

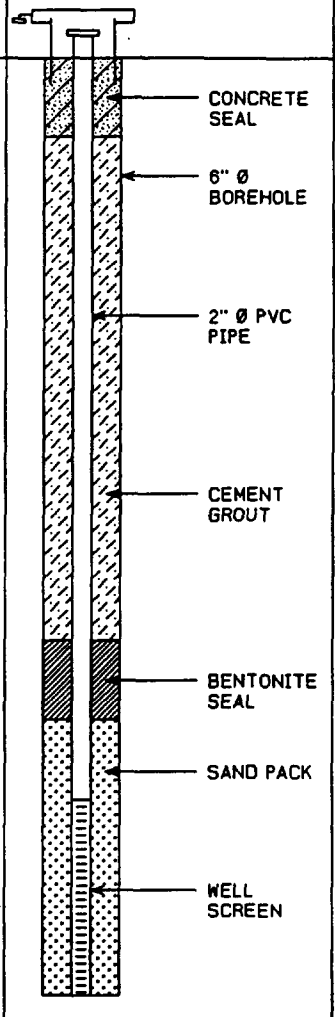
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-104
DATE COMPLETED: AUGUST 18, 1993
DRILLING METHOD: 3 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1097.54* *1095.60*					
	OVERBURDEN						
2.5							
5.0							
7.5							
10.0							
12.5							
15.0							
	TOP OF SAND PACK	*1078.91*					
17.5							
20.0							
22.5							
	END OF HOLE	*1071.91*					
25.0							
27.5							
30.0							
32.5							



SCREEN DETAILS
Length: 5ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-105
DATE COMPLETED: AUGUST 17, 1993
DRILLING METHOD: 3 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1101.60* *1099.51*					
	OVERBURDEN		CONCRETE SEAL				
-2.5			6" Ø BOREHOLE				
-5.0							
-7.5							
-10.0							
-12.5			2" Ø PVC PIPE				
-15.0							
-17.5							
-20.0							
-22.5							
-25.0			CEMENT GROUT				
-27.5							
-30.0			BENTONITE SEAL				
-32.5	TOP OF SAND PACK	*1067.60*					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-105
DATE COMPLETED: AUGUST 17, 1993
DRILLING METHOD: 3 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5			SAND PACK WELL SCREEN				
	END OF HOLE	1060.60	SCREEN DETAILS Length: 5ft Diameter: 2" Slot Size: #10 Material: PVC Sand Pack Material: Sand				
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							
67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-106
DATE COMPLETED: SEPTEMBER 8, 1993
DRILLING METHOD: 3 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser)	*1102.23*					
	GROUND SURFACE	*1100.04*					
	OVERBURDEN						
-2.5			6" Ø BOREHOLE				
-5.0							
-7.5							
-10.0			2" Ø PVC PIPE				
-12.5							
-15.0			CEMENT GROUT				
-17.5							
-20.0							
-22.5			BENTONITE SEAL				
-25.0	TOP OF SAND PACK	*1075.63*	SAND PACK				
-27.5							
-30.0			WELL SCREEN				
-32.5	END OF HOLE	*1068.13*					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-106
DATE COMPLETED: SEPTEMBER 8, 1993
DRILLING METHOD: 3 ¼" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
			SCREEN DETAILS Length: 5ft Diameter: 2" Slot Size: #10 Material: PVC Sand Pack Material: Sand				
37.5							
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0		—					
67.5							

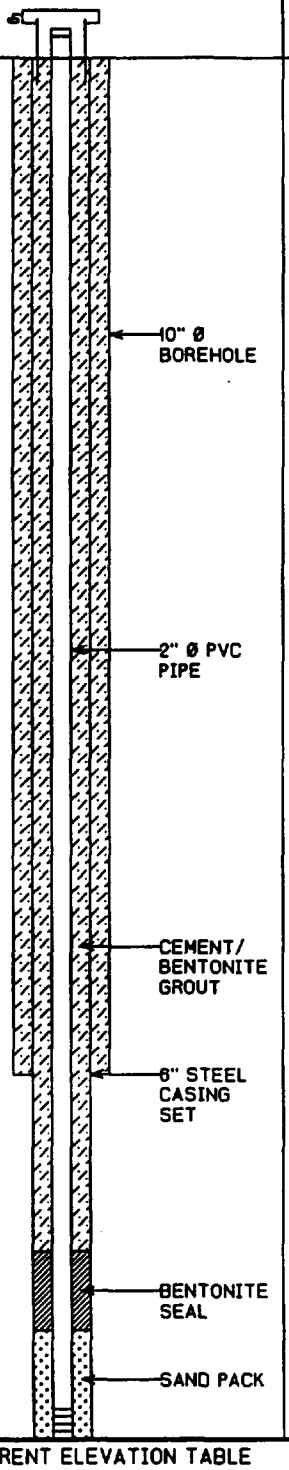
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-201
DATE COMPLETED: OCTOBER 4, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1099.74* *1097.58*					
0	OVERBURDEN (FILL)						
2.5							
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
	BEDROCK: Shale	*1074.34*					
25.0							
	END OF 6" Ø CASING	*1071.84*					
27.5							
30.0							
	TOP OF SAND PACK	*1065.34*					
32.5							



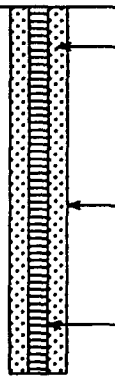
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-201
DATE COMPLETED: OCTOBER 4, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5							
-40.0							
-42.5	BEDROCK: Limestone	1055.34					
	END OF HOLE	1053.34					
-45.0							
-47.5							
-50.0							
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							



SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-202
DATE COMPLETED: DECEMBER 13, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1101.56* *1099.10*					
	OVERBURDEN		CONCRETE SEAL				
-2.5							
			10" Ø BOREHOLE				
-5.0							
-7.5			6" Ø STEEL SURFACE CASING				
-10.0							
-12.5							
-15.0			2" Ø PVC PIPE				
-17.5							
-20.0							
-22.5							
-25.0							
-27.5			CEMENT/ BENTONITE GROUT				
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-202
DATE COMPLETED: DECEMBER 13, 1993
DRILLING METHOD: 4 ¼" ID HSA
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5	BEDROCK	1061.02	CEMENT/ BENTONITE GROUT				
-40.0	TOP OF SAND PACK	1058.70	BENTONITE SEAL				
	END OF 6" Ø CASING	1058.02	6" CASING SET				
-42.5			SAND PACK				
-45.0			6" Ø BOREHOLE				
-47.5							
-50.0	- limestone		WELL SCREEN				
-52.5	END OF HOLE	1046.70					
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							

SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-203
DATE COMPLETED: OCTOBER 3, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1098.31* *1095.73*					
0	OVERBURDEN (FILL)						
-2.5							
-5.0							
-7.5			10" Ø BOREHOLE				
-10.0							
-12.5							
-15.0			2" Ø PVC PIPE				
-17.5							
-20.0							
-22.5			CEMENT/ BENTONITE GROUT				
-25.0							
-27.5	BEDROCK: Shale	*1068.73*					
-30.0	END OF 6" Ø CASING	*1066.32*	6" STEEL CASING SET				
-32.5			BENTONITE SEAL				
-35.0	TOP OF SAND PACK	*1060.73*					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⧩ STATIC WATER LEVEL ⧩

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-203
DATE COMPLETED: OCTOBER 3, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-40.0			SAND PACK				
-42.5			6" Ø BOREHOLE				
-45.0			WELL SCREEN				
-47.5							
	BEDROCK: Limestone	*1047.42*					
	END OF HOLE	*1046.72*					
-50.0			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: PVC Sand Pack Material: Sand				
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							
-70.0		—					
-72.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-204
DATE COMPLETED: DECEMBER 15, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO/K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1095.41* *1093.73*					
	OVERBURDEN						
-2.5							
-5.0							
-7.5			10" Ø BOREHOLE				
-10.0							
-12.5							
-15.0			2" Ø PVC PIPE				
-17.5							
-20.0							
-22.5							
-25.0							
-27.5			CEMENT/ BENTONITE GROUT				
-30.0							
-32.5							
-35.0		*1058.35*	BENTONITE SEAL				
	BEDROCK: Shale, sandy						
	TOP OF SAND PACK	*1057.32*					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-204
DATE COMPLETED: DECEMBER 15, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO/K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-40.0	END OF 6" Ø CASING	1055.35	6" STEEL CASING SET				
-42.5			SAND PACK				
-45.0			6" Ø COREHOLE				
-47.5			WELL SCREEN				
	END OF SCREEN	1045.32					
-50.0	BEDROCK: Limestone	1044.35					
	END OF HOLE	1043.85					
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							
-70.0							
-72.5							

SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-205
DATE COMPLETED: DECEMBER 7, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO/K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser)	*1096.63*					
	GROUND SURFACE	*1094.34*					
	OVERBURDEN (FILL)						
-2.5							
-5.0			10" Ø BOREHOLE				
-7.5							
-10.0							
-12.5			2" Ø PVC PIPE				
-15.0							
-17.5							
-20.0			CEMENT/ BENTONITE GROUT				
-22.5							
	END OF 6" Ø CASING	*1070.21*	6" STEEL CASING SET				
-25.0							
-27.5		*1067.11*	BENTONITE SEAL				
	BEDROCK: Shale, sandy, gray, interbedded silt-stone	*1066.21*					
	TOP OF SAND PACK						
-30.0			SAND PACK				
-32.5			WELL SCREEN				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-205
DATE COMPLETED: DECEMBER 7, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO/K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-37.5			6" Ø BOREHOLE SAND PACK				
-40.0	BEDROCK: Limestone	*1054.81*					
	END OF HOLE	*1054.21*	SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: PVC Sand Pack Material: Sand				
-42.5							
-45.0							
-47.5							
-50.0							
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							

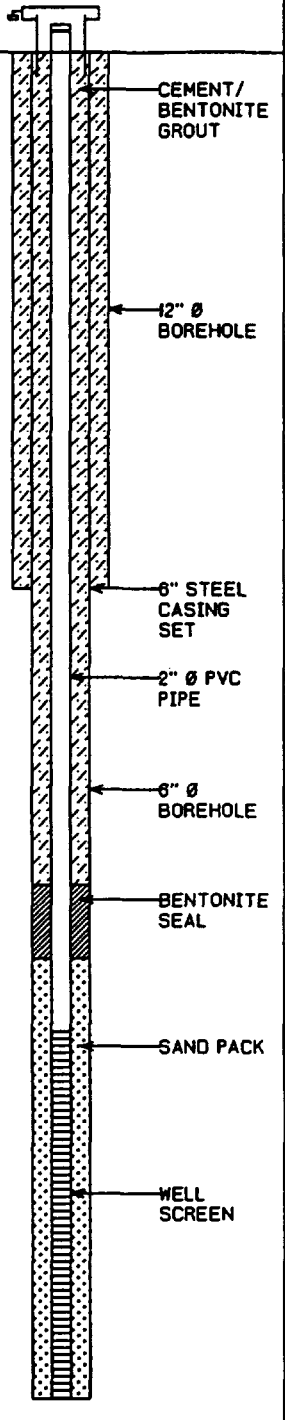
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-206
DATE COMPLETED: AUGUST 2, 1994
DRILLING METHOD: HSA, AIR ROTARY
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1088.05* *1085.62*					
0	OVERBURDEN						
2.5							
5.0							
7.5		*1077.62*					
	BEDROCK						
10.0							
12.5							
15.0	END OF 6" Ø CASING	*1071.03*					
17.5							
20.0							
22.5							
25.0	TOP OF SAND PACK	*1061.03*					
27.5							
30.0							
32.5							
	LIMESTONE	*1052.03*					
35.0							
	END OF HOLE	*1049.03*					



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-206
DATE COMPLETED: AUGUST 2, 1994
DRILLING METHOD: HSA, AIR ROTARY
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
-40.0			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: PVC Sand Pack Material: Sand				
-42.5							
-45.0							
-47.5							
-50.0							
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							
-70.0		—					
-72.5							

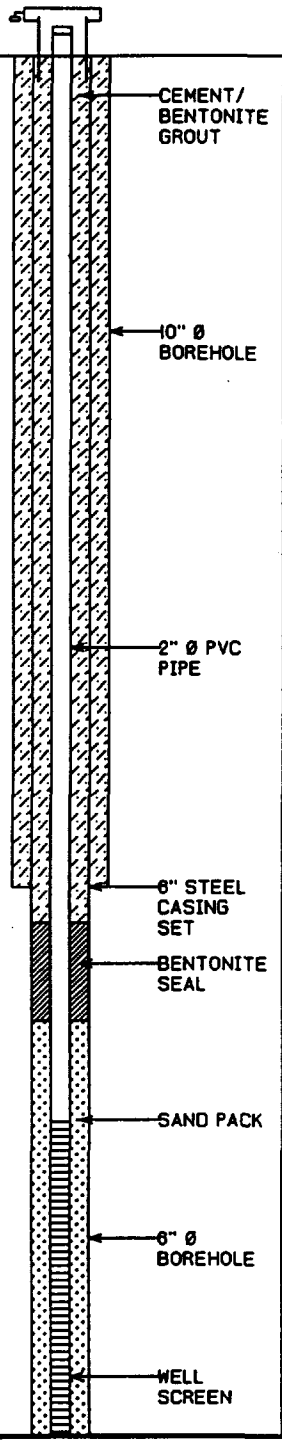
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-207
DATE COMPLETED: AUGUST 25, 1994
DRILLING METHOD: HSA, AIR ROTARY
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1091.36* *1089.53*					
	OVERBURDEN						
17.5	BEDROCK	*1071.67*					
20.0	END OF 6" Ø CASING	*1068.48*					
25.0	TOP OF SAND PACK	*1065.08*					
32.5							



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(UPPER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-207
DATE COMPLETED: AUGUST 25, 1994
DRILLING METHOD: HSA, AIR ROTARY
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
		1053.67	 WELL SCREEN				
	LIMESTONE						
-37.5	END OF HOLE	1052.48	SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: PVC Sand Pack Material: Sand				
-40.0							
-42.5							
-45.0							
-47.5							
-50.0							
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-301
DATE COMPLETED: OCTOBER 4, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1100.07* *1097.76*					
0	OVERBURDEN (FILL)						
-2.5							
-5.0			14" Ø BOREHOLE				
-7.5							
-10.0							
-12.5			10" Ø STEEL CASING				
-15.0							
-17.5			6" Ø STEEL CASING				
-20.0							
-22.5			2" Ø PVC PIPE				
	BEDROCK	*1074.76*					
-25.0							
	END OF 10" Ø CASING	*1072.30*	10" CASING SET				
-27.5							
-30.0		—	CEMENT/ BENTONITE GROUT				
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-301
DATE COMPLETED: OCTOBER 4, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5			CEMENT/ BENTONITE GROUT				
40.0			10" Ø BOREHOLE				
42.5							
	LIMESTONE	1054.80					
45.0	END OF 6" Ø CASING	1052.47	6" CASING SET				
47.5							
50.0							
52.5			BENTONITE SEAL				
	TOP OF SAND PACK	1043.80					
55.0			SAND PACK				
57.5							
60.0			6" Ø BOREHOLE				
62.5			WELL SCREEN				
65.0							
	END OF HOLE	1031.80					
67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-301
DATE COMPLETED: OCTOBER 4, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
-72.5			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: PVC Sand Pack Material: Sand				
-75.0							
-77.5							
-80.0							
-82.5							
-85.0							
-87.5							
-90.0							
-92.5							
-95.0							
-97.5							
-100.0							
-102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-302
DATE COMPLETED: DECEMBER 16, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1101.25* *1098.76*					
	OVERBURDEN						
-2.5			2" Ø PVC PIPE				
-5.0			6" STEEL CASING				
-7.5							
-10.0							
-12.5			10" Ø STEEL SURFACE CASING				
-15.0							
-17.5							
-20.0			14" Ø BOREHOLE				
-22.5							
-25.0							
-27.5	BEDROCK	*1071.83*	CEMENT/ BENTONITE GROUT				
-30.0							
-32.5		—					
-35.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-302
DATE COMPLETED: DECEMBER 16, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-40.0	END OF 10" Ø CASING	1060.83	10" CASING SET				
-42.5							
-45.0			10" Ø BOREHOLE				
-47.5			6" Ø STEEL CASING				
-50.0	END OF 6" Ø CASING	1048.83	6" CASING SET				
-52.5							
-55.0			CEMENT/ BENTONITE GROUT				
-57.5	TOP OF SAND PACK	1040.83	BENTONITE SEAL				
-60.0							
-62.5			SAND PACK				
-65.0			WELL SCREEN				
-67.5			6" Ø BOREHOLE				
-70.0	END OF HOLE	1028.83					
-72.5							

SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-303
DATE COMPLETED: OCTOBER 3, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1098.39* *1095.82*					
	OVERBURDEN (FILL)						
-2.5							
-5.0			14" Ø BOREHOLE				
-7.5							
-10.0							
-12.5			10" Ø STEEL CASING				
-15.0							
-17.5			6" Ø STEEL CASING				
-20.0							
-22.5			2" Ø PVC PIPE				
-25.0							
-27.5	BEDROCK	*1068.59*	CEMENT/ BENTONITE GROUT				
	END OF 10" Ø CASING	*1066.59*					
-30.0			10" CASING SET				
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-303
DATE COMPLETED: OCTOBER 3, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5			CEMENT/ BENTONITE GROUT				
40.0							
42.5			10" Ø BOREHOLE				
45.0							
47.5	LIMESTONE	1047.92					
	END OF 6" Ø CASING	1047.59	6" CASING SET				
50.0							
52.5							
55.0			6" Ø BOREHOLE				
57.5							
60.0							
62.5							
65.0			BENTONITE SEAL				
	TOP OF SAND PACK	1029.59					
67.5			SAND PACK				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-303
DATE COMPLETED: OCTOBER 3, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-72.5			6" Ø BOREHOLE				
-75.0			WELL SCREEN				
-77.5			SAND PACK				
	END OF HOLE	1017.59					
-80.0							
-82.5							
-85.0							
-87.5							
-90.0							
-92.5							
-95.0							
-97.5							
-100.0							
-102.5							

SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-305
DATE COMPLETED: DECEMBER 9, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1098.49* *1094.20*					
	OVERBURDEN (FILL)						
-2.5							
-5.0			14" Ø BOREHOLE				
-7.5							
-10.0							
-12.5			10" Ø STEEL CASING				
-15.0							
-17.5			6" Ø STEEL CASING				
-20.0							
-22.5			2" Ø PVC PIPE				
-25.0							
-27.5			CEMENT/ BENTONITE GROUT				
	BEDROCK	*1066.20*					
-30.0							
	END OF 10" Ø CASING	*1062.90*	10" CASING SET				
-32.5							
	- shale, sandy, gray, interbedded silt-stone						

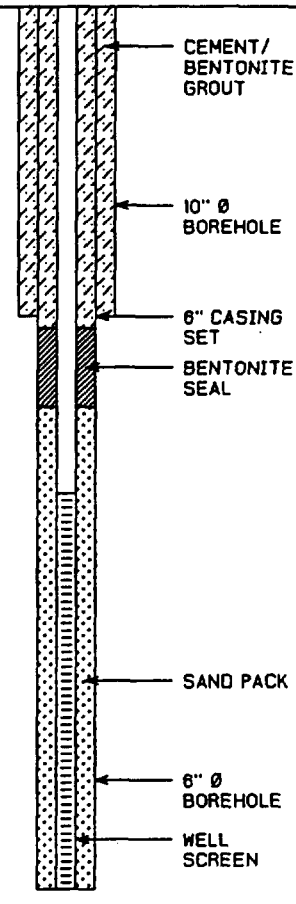
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-305
DATE COMPLETED: DECEMBER 9, 1993
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: T. BENKO

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5							
40.0							
42.5	END OF 6" Ø CASING – limestone	1051.40					
45.0	TOP OF SAND PACK	1049.11					
47.5							
50.0							
52.5							
55.0							
57.5	END OF HOLE	1036.92					
60.0							
62.5							
65.0							
67.5							



SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-306
DATE COMPLETED: AUGUST 3, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1088.35* *1085.87*					
	OVERBURDEN						
-2.5							
-5.0							
-7.5		*1077.87*					
	BEDROCK						
-10.0							
-12.5	END OF 10" Ø CASING	*1073.87*					
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
	LIMESTONE	*1054.74*					
-32.5							
-35.0	END OF 6" Ø CASING	*1050.77*					

MONITOR INSTALLATION:
- 14" Ø BOREHOLE
- 10" Ø STEEL CASING
- 10" CASING SET
- 6" Ø STEEL CASING
- 2" Ø PVC PIPE
- CEMENT/ BENTONITE GROUT
- 10" Ø BOREHOLE
- 6" CASING SET

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⊽ STATIC WATER LEVEL ⊽

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-306
DATE COMPLETED: AUGUST 3, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
40.0			6" Ø BOREHOLE				
42.5							
45.0							
47.5							
50.0							
52.5							
55.0			2" Ø PVC PIPE				
57.5							
60.0							
62.5			CEMENT/ BENTONITE GROUT				
65.0							
67.5							
70.0		—					
72.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-306
DATE COMPLETED: AUGUST 3, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-77.5			6" Ø BOREHOLE				
-80.0			2" Ø PVC PIPE				
-82.5			BENTONITE SLURRY				
-85.0	TOP OF SAND PACK	1001.77					
-87.5			SAND PACK				
-90.0							
-92.5							
-95.0			WELL SCREEN				
-97.5	END OF HOLE	988.77					
-100.0							
-102.5							
-105.0							
-107.5		—					
-110.0							

SCREEN DETAILS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: PVC
Sand Pack Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-307
DATE COMPLETED: AUGUST 24, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	1091.40 1089.42					
	OVERBURDEN						
2.5							
5.0			14" Ø BOREHOLE				
7.5							
10.0			10" Ø STEEL CASING				
12.5							
15.0			6" Ø STEEL CASING				
17.5							
	BEDROCK	1070.75	2" Ø PVC PIPE				
20.0	END OF 10" Ø CASING	1069.75	10" CASING SET				
22.5							
25.0			10" Ø BOREHOLE				
27.5							
30.0			CEMENT/ BENTONITE GROUT				
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-307
DATE COMPLETED: AUGUST 24, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	END OF 6" Ø CASING	1052.75	6" CASING SET				
37.5	LIMESTONE	1052.75					
	END OF LIMESTONE	1050.61	CEMENT/ BENTONITE GROUT				
40.0							
42.5							
45.0			6" Ø BOREHOLE				
47.5							
50.0			2" Ø PVC PIPE				
52.5							
55.0			BENTONITE SEAL				
	TOP OF SAND PACK	1032.75					
57.5							
60.0			SAND PACK				
62.5							
65.0			WELL SCREEN				
67.5							
	END OF HOLE	1020.75					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(LOWER INTERMEDIATE UNIT)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: PZ-307
DATE COMPLETED: AUGUST 24, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-72.5			SCREEN DETAILS Length: 10ft Diameter: 2" Slot Size: #10 Material: PVC Sand Pack Material: Sand				
-75.0							
-77.5							
-80.0							
-82.5							
-85.0							
-87.5							
-90.0							
-92.5							
-95.0							
-97.5							
-100.0							
-102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

ATTACHMENT B

EXTRACTION WELL INSTRUMENTATION LOGS

STRATIGRAPHIC AND INSTRUMENTATION LOG
(ABANDONED ON JULY 11, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-1
DATE COMPLETED: SEPTEMBER 29, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1100.23* *1097.54*					
	OVERBURDEN						
-2.5							
-5.0			12" Ø BOREHOLE				
-7.5							
-10.0							
-12.5							
-15.0							
-17.5			8" STEEL CASING				
-20.0							
-22.5			CEMENT/ BENTONITE GROUT				
	BEDROCK, siltstone/shale	*1074.54*					
-25.0	END OF 8" Ø CASING	*1073.04*	8" CASING SET				
-27.5			WELL SCREEN				
-30.0							
-32.5			8" Ø BOREHOLE				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(ABANDONED ON JULY 11, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-1
DATE COMPLETED: SEPTEMBER 29, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5	- fracture zones						
40.0							
42.5	- limestone		WELL SCREEN				
45.0							
47.5							
50.0							
52.5							
55.0	- fracture zone						
57.5			8" Ø BOREHOLE				
60.0							
62.5							
65.0							
67.5	END OF HOLE	1030.04					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(ABANDONED ON JULY 11, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-1
DATE COMPLETED: SEPTEMBER 29, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
72.5			SCREEN DETAILS Length: 50ft Diameter: 6" Slot Size: #40 Material: PVC				
75.0							
77.5							
80.0							
82.5							
85.0							
87.5							
90.0							
92.5							
95.0							
97.5							
100.0							
102.5							

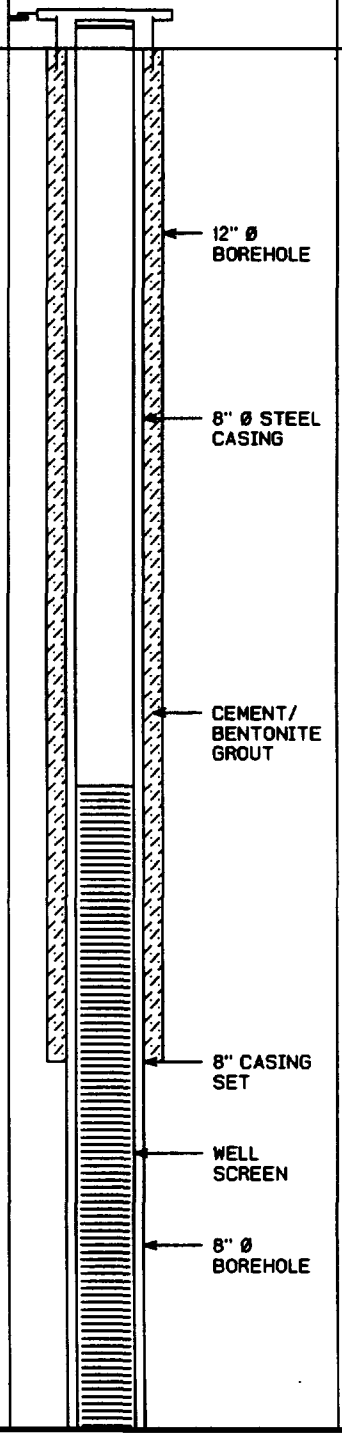
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(ABANDONED ON JULY 10, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-2
DATE COMPLETED: SEPTEMBER 29, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1097.80* *1095.41*					
	OVERBURDEN (FILL)						
22.5	WEATHERED BEDROCK	*1072.41*					
27.5	– siltstone	*1067.91*					
	END OF 8" Ø CASING						



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(ABANDONED ON JULY 10, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-2
DATE COMPLETED: SEPTEMBER 29, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-40.0							
-42.5			WELL SCREEN				
-45.0							
-47.5	- limestone						
-50.0							
-52.5							
-55.0							
-57.5			8" Ø BOREHOLE				
-60.0							
-62.5							
-65.0							
	END OF HOLE	*1029.69*					
-67.5			SCREEN DETAILS Length: 50ft Diameter: 6" Slot Size: #40 Material: PVC				
-70.0							
-72.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(CONVERTED TO MW-223 ON JULY 15, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-3
DATE COMPLETED: SEPTEMBER 29, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1097.81* *1095.48*					
	OVERBURDEN						
-2.5							
-5.0			12" Ø BOREHOLE				
-7.5							
-10.0							
-12.5							
-15.0			8" Ø STEEL CASING				
-17.5							
-20.0							
-22.5							
-25.0			CEMENT/ BENTONITE GROUT				
-27.5							
-30.0							
-32.5		*1062.48*					
	BEDROCK, shale						
-35.0	END OF 8" Ø CASING	*1060.48*	8" CASING SET				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⧩ STATIC WATER LEVEL ⧩

STRATIGRAPHIC AND INSTRUMENTATION LOG
(CONVERTED TO MW-223 ON JULY 15, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-3
DATE COMPLETED: SEPTEMBER 29, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-40.0							
-42.5							
-45.0			WELL SCREEN				
	LIMESTONE	1049.48					
-47.5							
	SHALE	1047.48					
-50.0							
-52.5							
-55.0							
-57.5							
-60.0			8" Ø BOREHOLE				
-62.5							
-65.0							
-67.5							
-70.0							
-72.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(CONVERTED TO MW-223 ON JULY 15, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-3
DATE COMPLETED: SEPTEMBER 29, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-77.5			WELL SCREEN				
-80.0							
-82.5			8" Ø BOREHOLE				
-85.0							
-87.5	END OF HOLE	1008.41	SCREEN DETAILS Length: 76.5ft Diameter: 6" Slot Size: #40 Material: PVC				
-90.0							
-92.5							
-95.0							
-97.5							
-100.0							
-102.5							
-105.0							
-107.5							
-110.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(ABANDONED ON JULY 10, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-4
DATE COMPLETED: AUGUST 24, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1095.15* *1093.17*					
	OVERBURDEN						
-2.5							
-5.0			12" Ø BOREHOLE				
-7.5							
-10.0							
-12.5							
-15.0			8" Ø STEEL CASING				
-17.5							
-20.0							
-22.5							
-25.0			CEMENT/ BENTONITE GROUT				
-27.5							
-30.0							
-32.5							
	BEDROCK, shale	*1060.17*					
-35.0	END OF 8" Ø CASING	*1058.17*	8" CASING SET				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⊽ STATIC WATER LEVEL ⊻

STRATIGRAPHIC AND INSTRUMENTATION LOG
(ABANDONED ON JULY 10, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-4
DATE COMPLETED: AUGUST 24, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
40.0							
42.5	- limestone						
45.0			WELL SCREEN				
	- shale						
47.5							
50.0							
52.5							
	- high porosity zone						
55.0							
57.5							
60.0	- limestone		8" Ø BOREHOLE				
	- shale						
62.5							
65.0							
67.5							
70.0							
72.5	- high porosity zone						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(ABANDONED ON JULY 10, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-4
DATE COMPLETED: AUGUST 24, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
77.5							
80.0			WELL SCREEN				
82.5			8" Ø BOREHOLE				
85.0							
	END OF HOLE	1007.17					
87.5			SCREEN DETAILS Length: 40ft Diameter: 6" Slot Size: #40 Material: PVC				
90.0							
92.5							
95.0							
97.5							
100.0							
102.5							
105.0							
107.5							
110.0							

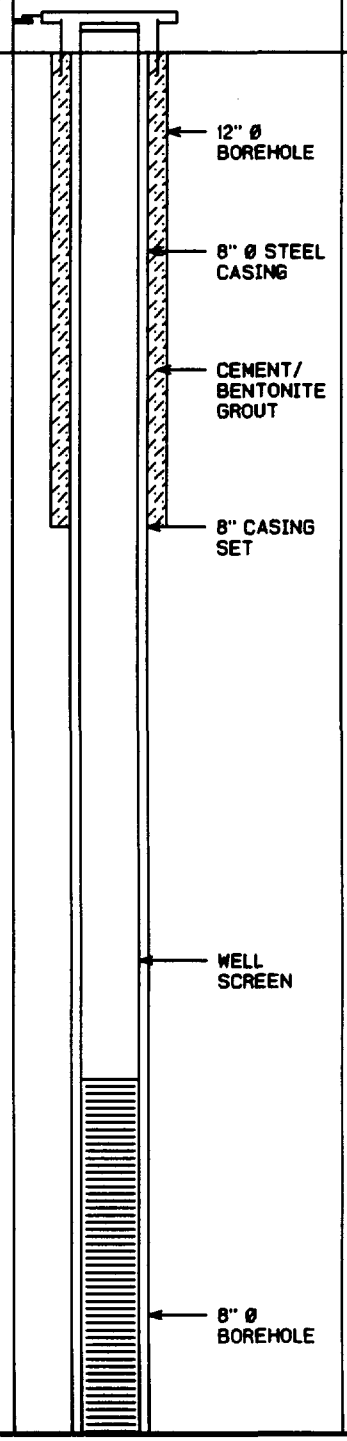
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(CONVERTED TO MW-224 ON JULY 13, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-5
DATE COMPLETED: AUGUST 23, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1088.87* *1086.15*					
	OVERBURDEN						
10.0	BEDROCK, shale	*1076.15*					
12.5	END OF 8" Ø CASING	*1074.15*					



2.5
5.0
7.5
15.0
17.5
20.0
22.5
25.0
27.5
30.0
32.5

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(CONVERTED TO MW-224 ON JULY 13, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-5
DATE COMPLETED: AUGUST 23, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5	- limestone		WELL SCREEN				
40.0							
42.5	- shale						
45.0							
47.5							
50.0			8" Ø BOREHOLE				
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							
67.5							
	END OF HOLE	1017.97					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(CONVERTED TO MW-224 ON JULY 13, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-5
DATE COMPLETED: AUGUST 23, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
72.5			SCREEN DETAILS Length: 50ft Diameter: 6" Slot Size: #40 Material: PVC				
75.0							
77.5							
80.0							
82.5							
85.0							
87.5							
90.0							
92.5							
95.0							
97.5							
100.0							
102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(ABANDONED ON JULY 14, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-6
DATE COMPLETED: AUGUST 23, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	*1089.54* *1086.15*					
0	OVERBURDEN						
2.5			12" Ø BOREHOLE				
5.0			8" Ø STEEL CASING				
7.5			CEMENT/ BENTONITE GROUT				
10.0	BEDROCK, shale	*1076.15*					
12.5	END OF 8" Ø CASING	*1074.15*	8" CASING SET				
15.0							
17.5							
20.0							
22.5			WELL SCREEN				
25.0							
27.5							
30.0	- limestone						
32.5	- shale		8" Ø BOREHOLE				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⊽ STATIC WATER LEVEL ⊽

STRATIGRAPHIC AND INSTRUMENTATION LOG
(ABANDONED ON JULY 14, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-6
DATE COMPLETED: AUGUST 23, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
37.5			WELL SCREEN				
40.0							
42.5							
45.0							
47.5							
50.0			8" Ø BOREHOLE				
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							
67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(ABANDONED ON JULY 14, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-6
DATE COMPLETED: AUGUST 23, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-72.5							
-75.0			WELL SCREEN				
-77.5							
-80.0	TOP OF SAND PACK	1006.15					
-82.5							
-85.0							
-87.5			8" Ø BOREHOLE				
-90.0							
-92.5							
-95.0							
-97.5			SAND PACK				
-100.0							
	- coal						
-102.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(ABANDONED ON JULY 14, 1995)

PROJECT NAME: SUMMIT NATIONAL SUPERFUND SITE
PROJECT NUMBER: 2372-50
CLIENT: PRP TECH COMMITTEE
LOCATION: DEERFIELD, OHIO

HOLE DESIGNATION: EW-6
DATE COMPLETED: AUGUST 23, 1994
DRILLING METHOD: ROTARY RIG
CRA SUPERVISOR: K. WEHN

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
107.5	END OF HOLE	979.15	WELL SCREEN SAND PACK SCREEN DETAILS Length: 90ft Diameter: 6" Slot Size: #40 Material: PVC Sand Pack Material: Sand				
110.0							
112.5							
115.0							
117.5							
120.0							
122.5							
125.0							
127.5							
130.0							
132.5							
135.0							
137.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

SDMS US EPA REGION V
FORMAT- OVERSIZED - 5
IMAGERY INSERT FORM

The item(s) listed below are not available in SDMS. In order to view original document or document pages, contact the Superfund Records Center.

SITE NAME	**SUMMIT NATIONAL**		
DOC ID #	**130760**		
DESCRIPTION OF ITEM(S)	**EXTRACTION WELL GEOPHYSICAL LOGS**		
REASON WHY UNSCANNABLE	**_X_ OVERSIZED**	**OR**	**___ FORMAT**
DATE OF ITEM(S)	**8-23-94 - 9-29-94**		
NO. OF ITEMS	**4**		
PHASE	**REMEDIATION**		
PRP	**N/A**		
PHASE (AR DOCUMENTS ONLY)	**___ Remedial ___ Removal ___ Deletion Docket ___ AR** **___ Original ____ Update # ___ Volume ____ of ___**		
O.U.			
LOCATION	**Box # _5_ Folder # _4_ Subsection _____**		
COMMENT(S)			

F

APPENDIX F

PRE-FINAL AND FINAL INSPECTION MEETING MINUTES

Ref. No. 2372

PRE-FINAL CONSTRUCTION INSPECTION MEETING MINUTES
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Location: Summit National Site (Site) Office

Time: July 28, 1995, 10:00 a.m. to 2:00 p.m.

In Attendance:

Anthony Rutter	-	United States Environmental Protection Agency (USEPA)
Regan Williams	-	Ohio Environmental Protection Agency (OEPA)
Richard McAvoy	-	Black and Veatch WSI
Gary Gifford	-	Summit National Facility Trust (SNFT)
Jack Michels	-	Conestoga-Rovers & Associates (CRA)
Stephen Hayle	-	CRA

Distribution: In Attendance

Patrick Steerman	-	Browning-Ferris Industries
Kenneth Walanski	-	Morton International, Inc.
Steve Whillier	-	CRA
Jeroen Winterink	-	CRA

Topics of Discussion	*Action By*
Prior to the Site inspection, the following items were discussed:	
1) SNFT requested clarification of the requirements to obtain a construction completion statement from USEPA for the purpose of satisfying the construction completion schedule and waiver of penalties provisions of the Consent Decree.	USEPA
2) USEPA outlined its schedule for bringing the Remedial Action (RA) to closure at this Site as follows:	
a) conduct pre-final Site inspection (which is being conducted today), and develop the construction completion punch list,	ALL
b) USEPA will write a three to four page pre-final construction report, which will be considered construction completion in USEPA's terms,	USEPA
c) conduct the final inspection in a month or so,	ALL
d) SNFT to complete the final RA report, and	CRA
e) USEPA will complete its final RA report.	USEPA
CRA noted that SNFT's final RA report is due to the Agencies three months following construction completion. USEPA requested that all phases of the remedial construction be compiled into one final RA report.	CRA
3) SNFT had spoken with Jim Morris (replacement to Peter Felitti) of USEPA and as a result is requesting formal recognition and approval of the changes to the Statement of Work (SOW) (i.e. changes to the treatment system process and to the groundwater extraction system).	USEPA
4) OEPA stated that the proposed disposal facility for the treatment system sludge bags has many violations. OEPA cannot disapprove using this facility, but USEPA could if SNFT persists on using the facility. CRA will source alternate facilities.	CRA

Topics of Discussion	*Action By*
5) SNFT questioned requirements for permanent signage at the Site. Although permanent signage is not required by the SOW, SNFT will propose a signage plan that draws minimal attention to the Site. Wording discussed was "Hazardous Site Under Remediation - No Trespassing" postings on the fence, and USEPA and OEPA contact numbers posted at the Site entrance.	CRA
6) SNFT stated that they are planning an open house in September for the completed remedial construction. USEPA's public relations will be notified of the open house.	SNFT
7) Outstanding submittals/approvals were identified as follows:	
a) Submit Final Operations and Maintenance Plan (needs to address USEPA's comments on the initial draft)	CRA
b) Submit Final RA report	CRA
c) Approval of demo and air monitoring plans	USEPA

Following the above discussions, Stephen Hayle, Richard McAvoy, Anthony Rutter and Regan Williams conducted a detailed inspection of the groundwater treatment facility, the groundwater collection system, the final soil cover, and the monitoring wells. The only deficiency noted was as follows:

1. The as-constructed Site fence is a 7-foot high fence, whereas an 8-foot high fence is specified. CRA is to review minutes to determine reason for modification.	CRA

Incomplete activities consisted of the following:

1. The additional monitoring wells are nearing completion. Protective posts and caps are still required at some of the additional wells.	CRA
2. The final soil cover requires fine grading and seeding.	CRA

These activities are scheduled to be completed within the next two weeks.

The date for the final inspection was set for August 23, 1995 at 1:00 p.m. at the Site office.

Any errors or omissions in these minutes are to be reported to Jack Michels prior to the August 23, 1995 Site meeting.

Ref. No. 2372

FINAL CONSTRUCTION INSPECTION MEETING MINUTES
SUMMIT NATIONAL SUPERFUND SITE
DEERFIELD TOWNSHIP OF PORTAGE COUNTY, OHIO

Location: Summit National Site (Site) Office

Time: August 23, 1995, 1:00 to 2:00 p.m.

In Attendance:

Anthony Rutter	-	United States Environmental Protection Agency (USEPA)
Regan Williams	-	Ohio Environmental Protection Agency (OEPA)
Richard McAvoy	-	Black and Veatch WSI (B&V)
Gary Gifford	-	Summit National Facility Trust (SNFT)
Jack Michels	-	Conestoga-Rovers & Associates (CRA)
Stephen Hayle	-	CRA

Distribution: In Attendance

Patrick Steerman	-	Browning-Ferris Industries
Kenneth Walanski	-	Morton International, Inc.
Steve Whillier	-	CRA
Jeroen Winterink	-	CRA

Topics of Discussion	*Action By*

Prior to the Site inspection, the following items were discussed:

1)	USEPA confirmed that its pre-final inspection report has been written and is waiting for internal signature. Once the report is approved, the date of the pre-final inspection will serve as the construction completion date for purposes of complying with the Consent Decree.	USEPA
2)	USEPA indicated that the significant changes (in reference to the Statement of Work (SOW)) that have been made to the Treatment Plant and Groundwater Extraction System have been approved by USEPA and OEPA, and are being incorporated into an Explanation of Significant Differences (ESD) to document compliance with the requirements of the SOW.	USEPA
3)	With respect to the Site security fence and signage, USEPA indicated that the 7-foot height of the perimeter fence is adequate. USEPA also noted that it has seen the perimeter sign proposal by CRA on behalf of SNFT and indicated the signage proposal is suitable. OEPA noted that it has sent a letter to CRA approving the height of the present fence and the proposed perimeter fence sign information and locations. CRA will proceed to order the signs and arrange for installation.	CRA
4)	B&V noted that in the Air Monitoring Report there was an error in one of the calculations and that B&V would speak to CRA concerning the calculation.	B&V/ CRA
5)	CRA indicated that the outstanding reports due to the Agencies by SNFT include the Operation and Maintenance Plan and the Final Construction Report. These reports will be submitted before the "three months from construction completion" which is allowed for by the remedial action schedule.	CRA
6)	SNFT provided a status update as follows: • the Site Phone Number (947-0335) will be used as the Owner Contact Number. All other numbers will be disconnected.	CRA

Topics of Discussion	*Action By*
• TreaTek-CRA will be the Operation and Maintenance Contractor. TreaTek-CRA has hired a local person who will be working approximately 40 hours/week and have a presence at the Site 7 days/week.	SNFT
• CRA will be off Site by the middle of September, but will stay involved with the project by performing groundwater monitoring and assisting SNFT with reporting requirements.	CRA
• Items which are being completed include the modifications within the treatment plant, the painting of the contingency tank (which will now be performed off Site), and the powerwashing of the Nichol's house.	CRA
7) USEPA asked about the SNFT future Open House and OEPA asked about the status of the Citizens Committee. SNFT indicated that no date had been scheduled (other then Septemberish) for the Open House, however Brian Bloom from Poppe Tyson and members from USEPA's Public Relations Department are organizing the event. SNFT also indicated that its next Update Issue will be the last issue (in a week or so), and expects that the Citizens Committee will dissolve.	SNFT
8) SNFT indicated that they will continue to monitor the low flow rate over the winter, and in the future may consider recycling the treatment plant effluent into a grass sprinkler system. However, such a plan would be sent to the Agencies for approval prior any action.	SNFT

Following the above discussions, USEPA, OEPA, SNFT, and CRA conducted the Final Construction Inspection of the groundwater treatment facility, the groundwater collection system, the soil removal and treatment, the final soil cover, and the monitoring wells. No outstanding deficiencies were noted.

Any errors or omissions in these minutes are to be reported to Jack Michels within 14 days of receipt of the minutes.

APPENDIX G

PRELIMINARY CLOSEOUT REPORT

Summit National Site
Deerfield, Ohio

I. Introduction

This Preliminary Close Out Report documents that the U.S. Environmental Protection Agency (U.S. EPA) completed all construction activities for the Summit National site in accordance with Procedures for Completion and Deletion of National Priorities List Sites and Update (OSWER Directive 9320.2-3C). U.S. EPA and the Ohio EPA conducted a pre-final inspection on July 28, 1995, and determined that the Potentially Responsible Parties (PRPs) constructed the remedy in accordance with the Remedial Design (RD) plans and specifications. The PRPs have initiated activities necessary to achieve performance standards and site completion.

II. Summary of Site Conditions

Background

The Summit National site, a former liquid waste disposal facility, is located on an abandoned coal strip mine at the intersection of Ohio Route 225 and U.S. Route 224 in Deerfield, Ohio; 20 miles west of Youngstown, and 45 miles southeast of Cleveland. The 11.5 - acre fenced site contained two ponds, an inactive incinerator, and several vacant buildings. Immediately surrounding the site are several rural residences, two landfills, light industries and farmland.

From 1973 to 1978, Summit National accepted liquid wastes including oil, resins, sludge, pesticide wastes and plating wastes in drums and tank trucks. These wastes were stored, incinerated, buried or dumped at the site. In June of 1978, Ohio EPA ordered Summit National to stop receiving waste and to remove all liquid waste stored at the site, and in 1979 filed a complaint against the operations for failing to comply with State regulations regarding the handling of Solid and liquid wastes.

Ohio's sampling of on-site soils and surface water indicated the presence of hazardous substances potentially harmful to public health and the environment. In 1980, Ohio EPA constructed a fence around the site, installed a drainage system to control surface water flow onto and off the site and six ground water monitoring wells. The same year, under authority granted in Section 311 of the Clean Water Act, U.S. EPA removed three liquid storage tanks and their contents and some contaminated surface soils from the site. In 1981, an agreement between Ohio and eight of the Potentially Responsible Parties resulted in a $2.5 million surface cleanup which removed drums, tanks, surface debris and a small amount of contaminated soil from the site. In 1983, U.S. EPA placed the site on the National Priorities List, a federal roster of the nation's uncontrolled or abandoned hazardous waste sites eligible for cleanup under the Superfund

program. From 1984 through 1987, U.S. EPA conducted a Remedial Investigation.

The Remedial Investigation confirmed the presence of contamination on-site in the groundwater, soils, pond sediments and surface water. In addition to on-site contamination, property outside the site perimeters was also found to be contaminated. A variety of organic and inorganic compounds was detected that could potentially threaten human health through direct contact with sediments and soils or ingestion of the groundwater.

Remedial Construction Activities

A ROD was signed in June of 1988 specifying the Remedial Action selected for the site. The ROD was amended on November 2, 1990.

The Remedial Action Specified in the ROD as amended is:

1. Expanding site boundaries to include contaminated areas along the perimeters and the south drainage ditch and constructing an 8-foot chain link fence around this expanded boundary.

2. Excavating and incinerating (in an on-site facility) soils and sediments as follows:

Contaminated soils on-site:	24,000 c.y.
Contaminated perimeter sediments: (including drainage ditches)	4,000 c.y.
Contents of buried drums	900-1600 drums

3. Dismantling and/or demolishing all on-site structures for on-site disposal.

4. Collecting and treating surface water from two on-site ponds and drainage ditches. Sediments would be excavated after ponds and ditches are dewatered.

5. Extracting groundwater for treatment from the various levels of the water table on-site by two basic components:

   a. A pipe and media drain system along the southern boundary and lower portions of the eastern and western boundaries to extract and treat contaminated groundwater.

   b. Additional extraction wells installed in the intermediate unit to augment the pipe and media drain system.

   All water extracted will be treated by a system to be enclosed in an on-site building.

6. Relocating or removing one vacant residence.

7. Ash from incinerated waste material would be tested to ensure it conforms with U.S. EPA and Ohio EPA standards and used as fill to regrade the site before the final cover is placed over the surface. If the ash fails the test it would either be placed in an on-site RCRA facility or sent to an off-site RCRA landfill.

8. Regrading the site and installing a soil cover over approximately 10.6 acres of site. This cover will consist of an 18-inch layer of loam and 6 inches of topsoil with gas vents installed for treating and monitoring potential air emissions.

9. Rerouting south and east drainage ditches to uncontaminated areas beyond the site.

The Statement of Work (SOW) specified that groundwater extraction and treatment would continue until a 10^{-6} risk level was achieved.

In a consent decree signed with U.S. EPA and OEPA, the PRPs agreed to perform the remedial design/remedial action (RD/RA). The RD was conducted in conformance with the approved ROD. The RA was initiated on June 22, 1993. The contractor conducted remedial activities as planned, and no additional areas of contamination were identified. U.S. EPA and the State conducted a pre-final inspection on July 28, 1995, which included a description and schedule for correcting construction items by the contractor. U.S. EPA and the State determined that the following RA activities were completed according to the ROD and design specifications:

1. Expanding site boundaries to include contaminated areas along the perimeters and the south drainage ditch and constructing an 7-foot chain link fence around this expanded boundary. The existing fence was 7 feet and was matched for the rest of the site.

2. Excavating and incinerating (in an on-site facility) soils and sediments as follow:

Contaminated soils on-site:	24,000 c.y.
Contaminated perimeter sediments: (including drainage ditches)	4,000 c.y.

3. Dismantling and/or demolishing all on-site structures for on-site disposal.

4. Collecting and treating surface water from two on-site ponds and drainage ditches. Sediments were excavated after ponds and ditches were dewatered.

5. Extracting groundwater for treatment from the various levels of the water table on-site by two basic components:

   a. A pipe and media drain system along the southern boundary and lower portions of the eastern and western boundaries to extract and treat contaminated groundwater.

   b. Additional extraction wells installed in the intermediate unit to augment the pipe and media drain system. These wells were abandoned or converted to monitoring wells due to the low permeability of this unit.

   All water extracted will be treated by a system to be enclosed in an on-site building.

6. Removed one vacant residence.

7. Ash from incinerated waste material was tested to ensure it conformed with U.S. EPA and Ohio EPA standards and was used as fill to regrade the site before the final cover was placed over the surface.

8. Regrading the site and installing a soil cover over approximately 10.6 acres of site. This cover consists of an 18-inch layer of loam and 6 inches of topsoil with gas vents installed for treating and monitoring potential air emissions.

9. Rerouted south and east drainage ditches to uncontaminated areas beyond the site.

10. The contents of about 480 overpacked drums were taken off-site for proper disposal.

After the contractor completed the extraction and treatment system, they began pumping and treating the contaminated groundwater. Treatment will continue for an indefinite period until a 10^{-6} risk level is achieved. Remaining activities to be completed by the contractor include any periodic adjustments and/or modifications to the constructed remedy to maintain optimum performance. The operations and maintence plan is in draft form and will be finalized soon.

Demonstration of Cleanup Activity-Quality Assurance and Quality Control

Activities at the site were consistent with the ROD, as amended, and all work plans were issued to contractors for design and construction of the RA, including sampling and analysis. The RD Report, including a Quality Assurance Project Plan, incorporated all U.S. EPA and State quality assurance and quality control (QA/QC) procedures and protocol. U.S. EPA analytical methods

were used for all validation and monitoring samples during RA activities. Sampling of soil, sediments, and water followed the U.S. EPA Protocol Test Methods for Evaluation Solid Wastes, Physical/Chemical Methods.

The QA/QC program used throughout the RA was rigorous in conformance with U.S. EPA and state standards; therefore, U.S. EPA and the State determined that all analytical results are accurate to the degree needed to assure satisfactory execution of the RA and are consistent with the ROD and the RD plans and specifications.

Activities and Schedule for site completion

The following activities will be completed according to the following schedule:

Task	Estimated Completion	Responsible Organization
Complete Punch List Items	08/22/95	PRP Contractor
Complete Final Inspection	08/23/95	EPA/State
Approve RA Report	12/15/95	EPA/State/PRPs
Implement O & M Plan	08/23/95	EPA/State
Complete Surface Water Monitoring	indefinite	PRP Contractor
Complete Ground Water Pump & Treat	indefinite	PRP Contractor
Approve Final Close Out Report	indefinite	EPA

Five-Year Review

Upon completion of this remedy, no hazardous substances will remain on-site above levels that prevent unlimited use and unrestricted exposure. However, because this remedy will require greater than five years to achieve these levels, pursuant to CERCLA section 121(c) and as provided in OSWER Directive 9355.7-02, Structure and Components of Five-Year Reviews, May 23, 1991, and OSWER Directive 9355.702A, Supplemental Five-Year Review Guidance, July 26, a five year review will be conducted prior to May 1998 (five years after the award of the RA contract).

William E. Muno, Acting Director
Waste Management Division

9/18/95
Date

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7.0 DESIGN CRITERIA - ON-SITE INCINERATION

7.1 PURPOSE OF ON-SITE INCINERATION

On-Site incineration provides a permanent solution to the management of contaminated soils with respect to organic contaminants, and consequently best satisfies the regulatory preference stated under SARA Section 121 for the use of technologies which provide a significant reduction in the toxicity, mobility and volume of hazardous substance materials. Treatment of specified on-Site and East-Site soil media will be by on-Site incineration. Transportable incineration units for the treatment of soil contaminated with organic compounds is a proven and well established remedial technology.

7.2 GENERAL REQUIREMENTS

Various incineration technologies are available for the destruction of organics in contaminated soil. The use of a rotary kiln is the best demonstrated with a reliable performance record based on testing by USEPA and by commercial incineration facilities. A rotary kiln system will be the incineration technology of choice for treatment of soil media at the Site.

The incinerator that actually will be used at the Site will be specific to the vendor/contractor selected for conducting the related Site work. The rotary kiln system to be used will include a process train consisting of a solids feed system, a primary combustion chamber, a secondary

combustion chamber, an ash discharge system and a flue gas treatment system. The operation of the incinerator will be governed by conditions determined from a demonstration burn, as detailed in Section 7.7, to ensure that performance and operational criteria are met. The demonstration burn also will determine whether soils from Grid Nos. 3-5, 4-5 and 4-6 can be adequately treated by the proposed on-Site incinerator or if they must be disposed of off Site. The incineration system will be equipped with measures to prevent and control fugitive emissions, and controls to regulate and monitor operational parameters and flue gas emissions.

Feed streams and air emissions will be sampled and analyzed during the demonstration burn and during operation to determine compliance with the performance criteria.

Requirements for waste handling, compliance monitoring, operation and maintenance, contractor selection, mobilization and demobilization will be provided with the preliminary design (30 percent complete) submission.

Detailed specifications for the incineration of waste on Site will be contractor specific depending on the technology proposed by the selected incineration vendor/contractor. Therefore, the preliminary design (30 percent complete) submission will be developed based on Site-specific and Regulatory-specific performance criteria. As a minimum, the performance criteria and operating requirements described in the following sections will be incorporated into the preliminary design.

7.3 PERFORMANCE CRITERIA

Federal criteria available for assessing the performance of incineration systems as stipulated under 40 CFR Part 264 (Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities) Subpart O (Incinerators) will apply for the performance criteria for all media to be incinerated at the Site, except for the PCB-contaminated soils from Grid Nos. 3-5, 4-5 and 4-6. Performance criteria for incineration of PCB-contaminated soil from Grid Nos. 3-5, 4-5 and 4-6 are specified herein.

Additional operational criteria, at a minimum, specifying the limits for waste feed rates, combustion temperatures, combustion gas velocities and requirements for the waste feed cutoff systems will be determined from the results of the demonstration burn which will be conducted.

Except for the PCB-contaminated soils from Grid Nos. 3-5, 4-5 and 4-6, the incineration facility will be capable of meeting the performance criteria in 40 CFR 270.19, 40 CFR 270.62, and 40 CFR 264.340 to 264.351 for all media to be incinerated at the Site. These performance criteria include the following requirements:

i) RCRA Principal Organic Hazardous Constituents (POHCs) must meet a Destruction Removal Efficiency (DRE) of at least 99.99 percent, as per 40 CFR 264.34(a)(1);

ii) stack particulate emissions will be less than 180 mg/dscm (0.08 gc/dscf) when corrected for the amount of oxygen in the stack gas as described as per 40 CFR 264.343(2)(c); and

iii) stack emissions of more than 1.8 kg/hr (4 lb/hr) of hydrogen chloride (HCl) will be controlled such that the HCl emission rate is not greater than the larger of either 1.8 kg/hr or one percent of the HCl in the stack gas prior to entering any pollution control equipment (99 percent removal efficiency), as per 40 CFR 264.343(b).

Carbon monoxide shall be limited to 20 parts per million volume (ppmv) in accordance with USEPA document "Guidance On PIC Controls for Hazardous Waste Incinerators, Volume V of the Hazardous Waste Incineration Guidance Series", in order to limit cancer risk associated with emission of products of incomplete combustion (PICs).

The emission rate of arsenic and chromium shall be controlled such that they do not exceed 2×10^{-3} and 3×10^{-4} grams per second (g/s), respectively. These limits for arsenic and chromium are based on an assessment of the waste stream, an upper limit waste feed rate of 20 tons per hour (tph), the cancer risks using USEPA guidance document "Guidance on Metals and Hydrogen Chloride Controls for Hazardous Waste Incinerators, Volume IV of the Hazardous Waste Incineration Guidance Series" and a 10-meter effective terrain adjusted stack height and rural non-complex terrain. Making use of the Tier II screening tables, which are considered to be very conservative, a cancer risk of approximately 6×10^{-6} was calculated for the stated emission rates.

The incineration facility will be capable of meeting the following performance criteria for incineration of soils from Grid Nos. 3-5, 4-5 and 4-6:

(i) all performance requirements of 40 CFR 264.340;

(ii) non-detection of PCB in stack gases, based on using USEPA sampling Method 0100 (Modified Method 5), collecting approximately 100 cubic feet of emissions. The analytical procedure will be USEPA Method 3540 for extraction and USEPA Method 8080 for analysis. This equates to an emission rate of PCB of less than 3×10^{-4} g/s;

(iii) emission rate of carbon monoxide not to exceed 20 ppmv;

(iv) combustion efficiency shall be at least 99.9% computed as follows:

$$\text{Combustion Efficiency} = \frac{\text{Concentration of } CO_2}{\text{Concentration of } CO_2 + CO} \times 100; \text{ and}$$

v) emission rate of arsenic and chromium not to exceed 2×10^{-3} and 3×10^{-4} g/s, respectively.

In evaluating the emission rate for PCB presented in ii) above, an upper limit realistic waste feed rate of 20 tph and the maximum PCB concentration of 590 mg/kg detected at the Site was used. At this worst-case feed rate scenario and using Tables 4 and 5 of the Hazardous Waste Air Quality Screening Procedure in Appendix V of USEPA's "Guidance on Metals and Hydrogen Chloride Control for Hazardous Waste Incinerators", a conservative estimate of the resultant maximum annual ambient air

concentration of PCB above background at the Site property line is on the order of 1.9 nanograms per cubic meter (ng/m^3) assuming rural non-complex terrain with an effective terrain adjusted stack height of 10 m. Based on health risk data presented in the USEPA document "Health Effect Assessment Summary Tables" (HEAST), and assuming that the incineration of the PCB soil will take place over a maximum time period of 1.5 years, the cancer risk associated with the stated PCB emission rate is on the order of 1×10^{-7}.

In developing the emission limits discussed above, consideration has also been taken of cancer risks associated with the incineration of other hydrocarbon compounds included in the waste stream. Based on an average VOC, BNA and pesticide concentration of 580 mg/kg in the waste stream, the cancer risk associated with incinerating this waste stream to a DRE of 99.99 percent is on the order of 1×10^{-7}. This figure was developed using Table 1 of "Guidance on PIC Controls for Hazardous Waste Incinerators" and verified wit the HEAST data base and the Industrial Source Complex Long Term air model.

Monitoring of stack emissions during the demonstration burn of all soils will include all parameters listed in 40 CFR 264.340 and 40 CFR 270.62, as well as arsenic and chromium. When the demonstration burn is to include PCB, oxides of nitrogen, PCB and total chlorinated organics will be monitored periodically in the stack gas and the PCB feed rate will be monitored every 15 minutes.

The Contractor performing the incineration shall also develop an air model meeting or exceeding the precision and accuracy

attained by the Industrial Source Complex Long Term Air Model. In conjunction with air monitoring of particulates, metals and POHCs at selected locations at and in the vicinity of the Site, the model will verify that the additional cancer risk of 1×10^{-5} is not exceeded. When PCBs are included in the demonstration burn, PCBs will also be monitored. Based on the results of the model and the air monitoring, allowable emission rates may be adjusted so as not to exceed a total additional cancer risk of 1×10^{-5}.

An outline of the air monitoring and stack monitoring program to be implemented during the demonstration burn and full-scale production burn shall be provided in the Air Monitoring Plan to be included with the 30 percent design submission.

Performance of the incinerator will be demonstrated by the vendor/contractor initially during the demonstration burn and on a regular basis during the incineration of waste material. Performance criteria including air emission criteria will be specified in the pre-final design (95 percent complete) submission.

During the demonstration burn, PCB soils fed into the incinerator and the resulting stack emissions will be sampled and analyzed, as specified in Section 7.7, and compared to the above performance criteria to determine if the soils from Grid Nos. 3-5, 4-5 and 4-6 may be treated by on-Site incineration. If the performance criteria are not met, the soils from Grid Nos. 3-5, 4-5 and 4-6 will be disposed of off Site.

7.4 OPERATING REQUIREMENTS

The incineration facility will be capable of meeting the following general operating conditions:

i) minimum solids throughput capacity will be based on the final estimated weight of materials to be incinerated and the time allocated in the Consent Decree for incineration of waste materials (alternative incineration capacity requirements will be evaluated on an incinerator specific basis);

ii) on-line status performance of at least 80 percent; and

iii) year round operation.

In addition, the incinerator will be capable of operation within the parameters established during the demonstration burn. Operating requirements will be specified in the pre-final design (95 percent complete) submission.

7.5 SYSTEM COMPONENT DESIGN REQUIREMENTS

7.5.1 Waste Feed System

A waste feed system will be provided which is capable of conveying solids and liquids separately or in combination (e.g. mixing supplementary fuels with solids to enhance their handling characteristics) to

the incineration facility. Additionally, the waste feed system will be capable of mixing excavated soils with higher BTU drummed waste materials. The mixing of lower BTU soils and higher BTU wastes may provide a more consistent waste feed which is more efficiently incinerated.

The feed system capacity will be consistent with the incinerator capacity and the specified production burn schedule. The feed system will include any waste preparation equipment (i.e drum shredder, sludge pump, size reduction) as required.

The incinerator also will be equipped with a system for injecting liquid wastes for incineration either separately or concurrently, with the solid waste feed.

The feed system will include the provision for the collection of samples for feed composition and feed rate determination.

7.5.2 Primary Combustion Chamber

The rotary kiln will provide primary combustion of the waste materials to volatilize the organic compounds in the waste stream. The minimum heat release required in the primary chamber will be in the order of 10 to 15 million British Thermal Units (BTU)/hour, to provide an adequate rate of treatment. The combination of residence time and temperature will be such that the organic compounds in the waste materials are reduced, by both destruction and volatilization, to the treatment performance standards for the waste materials. Destruction of the volatilized contaminants then will occur

in the secondary combustion chamber. The combustion units will be operated under negative pressure, to minimize the possibility of fugitive emissions.

7.5.3 Secondary Combustion Chamber

Volatilized contaminants from the primary combustion chamber will pass through a secondary combustion chamber to provide destruction of the contaminants to the DRE performance standards. The minimum heat release in the secondary combustion chamber also will be in the order of 10 to 15 million BTUs/hour, with sufficient residence time to ensure adequate destruction of the contaminants.

7.5.4 Ash Removal System

An ash removal system will be provided which is capable of removing ash residues resulting from thermal destruction of the wastes specified. The ash removal and handling system capacity will be consistent with incineration facility capacity and the specified schedule.

The ash removal and handling system will consist of a pre-quench, ash crushing and shredding (if required), magnetic separation provisions, final quench and final deposition into transport hoppers. The metallic material will be reclaimed by a reclamation facility and the remaining ash transferred to the ash storage area.

The ash removal system will include the provision for the collection of samples for ascertaining compliance with the ash performance criteria discussed in Section 7.6.

The ash removal system will be designed to prevent the mixing of any fly ash with the bottom ash until the flyash and bottom ash have been analyzed with respect to Toxicity Characteristic Leachate Procedure (TCLP) criteria for metals. The blending of ash to meet the criteria will not be permitted.

Ash will be sampled using a device which diverts the flow of ash into a sample container at regular intervals. Alternatively, ash may be sampled directly from the ash stockpiles.

7.5.5 Control Room

A control room will be provided in an enclosure separate from the process equipment. Equipment in the control room will include process controls and continuous data recording devices for monitoring process performance. Monitoring will be conducted such that compliance with the performance criteria can be demonstrated. At a minimum, the performance monitoring will include the following process parameters and such others as may be required in accordance with Federal standards and acceptable engineering practices:

i) primary and secondary chamber temperatures and pressures;

ii) stack gas and/or scrubber entry gas concentrations of:

a) oxygen (continuous),

b) carbon dioxide (continuous),

c) carbon monoxide (continuous),

d) total hydrocarbons (continuous),

e) hydrogen chloride (continuous), if required by demonstration burn results, and

f) backup monitoring for items a), b) and c) above; and

iii) combustion gas velocity.

The control room will have automatic control systems for the following:

i) maintaining operating conditions within acceptable process ranges for:

a) primary and secondary combustion chamber temperatures,

b) waste feed rates,

c) emission gas concentrations for oxygen, carbon monoxide, and total hydrocarbon, and

d) negative pressure within the combustion zone components; and

ii) stopping waste feed to the system when control limits are exceeded; and

iii) activation of the combustion gas by-pass if required.

7.5.6 Air Pollution Control System

The air pollution control system will be capable of controlling gaseous, particulate and aerosol type emissions from the incineration facility as required by the performance criteria.

The air pollution control system will include an exhaust stack and fan system which meets standards for acceptable engineering practices~~. It is anticipated that the emission control system will be comprised of a wet scrubber and cyclone. The air pollution control system will be~~ and designed to comply with the on-Site health and safety requirements which will be developed in the RA Health and Safety Plan. The vendor/contractor will be required to submit an Air Monitoring Plan for approval by SNFT, USEPA and OEPA.

The air pollution system may include wet scrubbers and cyclones, or any other suitable removal system, as required to meet air emission criteria.

7.5.7 Wastewater Treatment System

Wastewater from the incinerator will be conveyed to the on-Site groundwater treatment system for treatment prior to discharge to

surface waters. Preference will be given to systems incorporating recirculation of the treated water.

7.5.8 Auxiliary Fuel Systems

An auxiliary fuel system will provide storage capacity and feed capacity as required by the incineration facility. The auxiliary fuel system will have the following minimum design features:

i) auxiliary fuel blending with contaminated soils; and/or

ii) direct feed to thermal destruction system burners.

7.5.9 Ambient Air Quality Monitoring Systems

Ambient air monitoring for constituents listed in 40 CFR 50 will be performed on a regular basis. Details of the monitoring program will be included in the ~~vendor/contractor~~ Air Monitoring Plan for the project.

7.5.10 Mobility of Thermal Destruction System

The incinerator will be comprised of a system which is mobile (components which are trailer mounted) or transportable

(components which can be easily shipped and assembled at the Site) or some combination thereof which will require a minimum of set-up at the Site.

7.6 ASH DELISTING AND DISPOSAL CRITERIA

7.6.1 Delisting and Disposal Criteria

Delisting criteria for the ash are specified under 40 CFR Part 261 (Identification and Listing of Hazardous Waste). The major hazardous characteristic which may affect delisting of the ash is that of TCLP metals, however other hazardous constituents may affect delisting. Representative samples of the ash will be collected during the demonstration burn and the extracts analyzed in accordance with 40 CFR Part 261 for TCLP metals to demonstrate suitability for delisting. If the concentrations satisfy the TCLP regulatory levels for metals, delisting of the ash will then be performed by USEPA Region V Office of Superfund utilizing the substantive requirements of RCRA prior to commencement of remedial construction at the Site, and the ash will then be used on Site as common fill for pregrading of the Site to the final design base contours. If the concentrations do not satisfy the TCLP regulatory levels for metals, then SNFT may elect either of the following:

i) consider the ash to be a hazardous waste, requiring consolidation of the ash and securement on Site in a RCRA cell. If the RCRA cell is determined to be required, separate work plans and designs will be

prepared and submitted to USEPA and OEPA for review, modification and/or approval; or

ii) petition for delisting of the ash under 40 CFR Part 261, considering Site-specific attenuation mechanisms, disposal practices and potential receptors which are not accounted for in USEPA's setting of the TCLP regulatory levels.

~~Ash will be sampled and analyzed during the demonstration burn, and periodically during operation, to verify that the ash meets the delisting criteria to be established. Ash which does not satisfy the delisting criteria due to residual organics will be repassed through the incinerator until the criteria are met. Ash which does not meet the delisting criteria for inorganic constituents will be consolidated and secured on Site in a RCRA cell. Ash which meets the full delisting criteria will be used on Site as common fill for pregrading of the Site to the final design base contours. The construction of a RCRA cell is reserved for use only as a contingency measure. If a RCRA cell is determined to be required, separate work plans and designs will be prepared and submitted to USEPA and OEPA for review, modification and/or approval.~~

7.6.2 Support for Delisting Criteria

USEPA has used fate and transport models during delisting determinations to predict the concentration of hazardous constituents that may be released from the wastes after disposal, to determine

the potential impact on human health and the environment. To predict exposure point concentrations, USEPA has used the vertical and horizontal spread (VHS) model which is based on the following assumptions:

i) the waste source is infinite (i.e. continuous disposal occurs);

ii) the waste is buried in a landfill trench 40 feet wide and eight feet deep (the length of the trench is determined by the annual volume of waste);

iii) no aquifer recharge occurs downgradient of the waste disposal unit;

iv) the receptor point is a hypothetical well located 500 feet downgradient of the waste disposal unit; and

v) attenuation of the leachate is by advection/dispersion only (the model does not consider biodegradation, adsorption, precipitation or unsaturated soil conditions.

Due to public comments on the ultra-conservative nature of the VHS model, USEPA has proposed use of the EPA composite landfill model (EPACLM) for future delisting petitions. This model deals with unsaturated transport, other attenuation mechanisms and recharge to the aquifer. However, the model assumes for a landfill setting that disposal occurs for a 20-year period (even for a one time disposal). The EPACLM was used to establish the TCLP regulatory levels in leachate for determination of hazardous versus non-hazardous waste. The TCLP regulatory levels, using

this model, have been set at 100 times the MCLs. In essence, this implies that leachate from the waste will be diluted/attenuated by a factor of 100 before reaching the hypothetical potable water well 500 feet from the waste disposal unit.

For both models, USEPA has developed "reasonable worst-case disposal scenarios" which consider typical and generic disposal sites. However, USEPA does not use site-specific data in the models.

At the Summit National Superfund Site, soil will be incinerated and the ash, if non-hazardous, will be disposed of under the final soil cover. The estimated volume of ash is approximately 20,000 cubic yards and there are no receptor wells downgradient of the Site completed in the WTU. Furthermore, the WTU will be contained, collected and treated as a component of the remedy for the Site until the cleanup standards for the WTU aquifer are attained. Following cessation of groundwater cleanup, water levels will return to pre-containment levels and the WTU will discharge to the drainage ditch immediately south of the Site. Therefore, there is no potential for a downgradient receptor.

To determine the Site-specific dilution factor, the following WTU characteristics were used:

i) mean hydraulic conductivity (K) of 1.1 feet per day (ft/day);

ii) average saturated thickness (H) of 27 ft;

iii) natural hydraulic gradient (i) of 0.009 ft/ft (between P1-2 and MW9 based on PDI data); and

iv) mixing zone within the WTU of 50 percent.

The natural groundwater flux through an unit width of mixing zone therefore would be as follows:

$$Qm = K\,i\,A$$
$$= (1.1\ ft/day)\ (.009\ ft/ft)\ (1\ ft \times 27\ ft)\ (0.5)$$
$$= 0.14\ cu.\ ft\ /day$$

Assuming an infiltration (I) rate through the soil cover in the range of six to 12 inches per year, infiltration through a unit area of cover (and ash) would be as follows:

$$6\ in/\ yr = 0.0013\ cu.\ ft/day$$
$$12\ in/yr = 0.0026\ cu.ft/day.$$

The resulting dilution factors (DF) therefore is as follows:

$$DF = Qm/I$$
$$= 108 \text{ for } 6\ in/yr \text{ infiltration}$$
$$= 54 \text{ for } 12\ in/yr \text{ infiltration}$$

These dilution factors are conservative since they do not consider movement through the unsaturated zone, which ranges from five to seven feet in

thickness, or attenuation of the contaminants by mechanisms other than dilution. Therefore, the dilution/attenuation factor of 100 used by USEPA to establish TCLP regulatory levels assuredly will be attained at this Site. Consequently, if the the TCLP metal data for the ash satisfy the corresponding TCLP regulatory levels, the ash at the Site will be delisted. However, if the TCLP metal data exceed the corresponding TCLP regulatory levels, SNFT may petition for delisting of the ash under 40 CFR Part 261, considering Site-specific attenuation mechanisms, disposal practices and potential receptors which are not accounted for in USEPA's setting of the TCLP regulatory levels.

7.7 DEMONSTRATION BURN

Prior to commencing on-Site incineration, the selected incineration vendor/contractor will perform a demonstration burn. A Demonstration Burn Plan will be prepared based on the substantive requirements of 40 CFR 270.19 and 40 CFR 270.62 and the USEPA "Hazardous Waste Incineration Guidance Series" by the selected vendor/contractor for the review and approval of USEPA and OEPA. The Demonstration Burn Plan will include the following:

i) waste analysis data, consisting of:
   a) heating value of the waste (i.e. BTU),
   b) viscosity (if applicable),
   c) identification and quantification of Principal Organic Hazardous Constituents (POHCs) listed in 40 CFR 261, Appendix VIII,

expected to be present in the waste as well as over all waste composition,

d) organically bound chlorine content (if required),

e) ash content (if required), ~~and~~

f) measurement of carbon hydrogen, sulfur, nitrogen, phosphorous, oxygen and water contents to evaluate air requirements, and

g) PCB content, where applicable.

ii) incinerator design information, including:

a) manufacturer's name and model number of major incinerator components,

b) type of incinerator (rotary kiln),

c) linear dimensions of major incinerator components and cross-sectional area of the combustion chamber(s),

d) description of auxiliary fuel system,

e) capacities of prime movers,

f) description of automatic waste feed cutoff system(s),

g) stack gas monitoring and pollution control monitoring systems,

h) nozzle and burner design,

i) construction materials, and

j) location and description of temperature, pressure and flow indicating and control devices;

iii) sampling and monitoring requirements, including:

a) locations,

b) frequency,

c) analysis, and

d) equipment;

iv) test schedule and protocol, including:

a) date,

b) duration,

c) quantity of waste,

d) ranges of temperature,

e) waste feed rates,

f) combustion gas velocity, and

g) fuel rates,

v) emission control equipment, including a description of and the planned operating conditions of emission control equipment; and

vi) control information, including:

a) emergency procedures, and

b) feed cut-off levels.

Following set-up of the incineration facility, approval of the vendor/contractor's Demonstration Burn Plan and selection of the POHC, the vendor/contractor will perform a demonstration burn in accordance with the approved Demonstration Burn Plan.

The vendor/contractor will submit results of the demonstration burn, including sample analysis, calculations, and

conclusions, in accordance with the USEPA "Hazardous Waste Incineration Guidance Series" to SNFT for review. SNFT will review the demonstration burn report ~~data~~ and determine if acceptable ~~DREs~~ performance and emissions were achieved. The demonstration burn results and evaluation will be submitted to USEPA and OEPA for review and comment.

The following actions will be taken based on the results of the demonstration burn:

i) if acceptable ~~DREs~~ performance and operating parameters were achieved, SNFT, USEPA and OEPA will approve full-scale operation contingent on the specified operating conditions as developed from the demonstration burn and approved by USEPA and OEPA;

ii) if acceptable ~~DREs~~ performance and operating parameters were not achieved, SNFT will not approve the incineration facility for full-scale operation. The results of the demonstration burn will be analyzed and causes of deficiencies evaluated. The vendor/contractor will make the required changes to the incineration facility or operational procedures to bring the incineration facility in compliance with the specified operating parameters and DREs. A second demonstration burn then will be performed by the vendor/contractor. Upon successful completion, SNFT will approve full-scale (pursuant to the review and approval of USEPA and OEPA) operation contingent on the specified operating conditions as developed from the second demonstration burn and approved by USEPA and OEPA; and

iii) if acceptable emission rates were achieved for PCB-contaminated soils during the successful demonstration burn, SNFT, USEPA and OEPA will approve on-Site incineration of soils from Grid Nos. 3-5, 4-5 and 4-6, otherwise, SNFT, USEPA and OEPA will approve off-Site disposal of the surficial soils from these Grids.

The pre-final design (95 percent complete) submission will identify that the vendor/contractor will only be allowed three demonstration burn runs (if needed). Additionally, the period of time allowed for each demonstration burn run and evaluation will be identified.

The vendor/contractor will be allowed to operate during the interim period between the completion of the demonstration burn and USEPA and OEPA approval of the results. The interim operation will be contingent upon the demonstration burn performance and USEPA's and OEPA's approval. The production rate during the interim period will be proposed to and approved by USEPA and OEPA prior to interim incinerator operation. Soils from Grid Nos. 3-5, 4-5 and 4-6 will not be incinerated during this interim period.